

**Table 3-13**  
**Summary of SWMUs/AOCs**  
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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
IRP 7	72	FA in IRP <sup>3</sup>	< 90-day accumulation area	296		To be addressed in IRP Site 7 <sup>3</sup> .	5A	6
TAA 297	73	NFA	< 90-day accumulation area	297	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	3
RFA 74	74	NFA	Aircraft wash area	297		Located on tarmac	5A	1
UST T11	75	NFA	Underground storage tank	297		Spill containment tank	4A	7
OWS 297B	76	NFA	Oil/water separator	297	X	RFA recommended NFA	5A	7
UST 297C	77	NFA	Underground storage tank	297	X	Combined with SWMU/AOC 76	5A	7
	78	NFA	Drum storage area	297		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA
	79	NFA	Drum storage area	297		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA
	80	NFA	Drum storage area	297		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA
	81	NFA	Drum storage area	297		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA
	82	NFA	Drum storage area	297		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA
TAA 298	83	NFA	< 90-day accumulation area	298	X	RFA recommended NFA	4A	2
OWS 298C	84	FA	Oil/water separator	298	X	RFA recommended leak test/inspection of OWS	4A	7
UST 298D	85	FA	Underground storage tank	298	X	Combined with SWMU/AOC 84	4A	7
TAA 306	88	FA	< 90-day accumulation area	306	X	74 shallow soil samples collected from 47 locations, PCBs detected in shallow soils 0 - 2 feet) over a wide area and the extent of the PCB "release" was assessed. Transfer to the RAC for surface soil removal action (draft final RFA addendum 1995)	4A	6*
	89	NFA	Drum storage area	306		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	4A <sup>4</sup>	NA
IRP 12	90	FA in IRP	Former sewage treatment plant	307	X	To be addressed in IRP Site 12	4B	6
UST 314A	91	NFA	Underground storage tank	314	X	RFA recommended NFA	4A	7
UST 314B	92	NFA	Underground storage tank	314	X	RFA recommended NFA	4A	7

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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
TAA 317	93	NFA	< 90-day accumulation area	317		Detergent storage only. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4B	2
IRP 21	94	FA in IRP <sup>3</sup>	< 90-day accumulation area	320		To be addressed in IRP Site 21 <sup>3</sup> .	4B <sup>4</sup>	6
RFA 95	95	NFA	Engine test cell	324	X	RFA recommended NFA	4A	3
	96	NFA	Drum storage area	343		Source: RWQCB letter <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA
TAA 357	97	NFA	< 90-day accumulation area	357		No evidence of releases observed. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
RFA 98	98	NFA	Vehicle wash rack	359	X	RFA recommended NFA	4B	2
TAA 359B	99	NFA	< 90-day accumulation area	359	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4B	3
RFA 100	100	NFA	TCE degreaser	359	X	RFA recommended NFA	4B	3
OWS 359B	101	NFA	Oil/water separator	359	X	RFA recommended NFA	4B	7
UST 359C	102	NFA	Underground storage tank	359	X	RFA recommended NFA	4B	6
	103	NFA	Drum storage area	359		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	4B <sup>4</sup>	NA
IRP 8	104	FA in IRP <sup>3</sup>	< 90-day accumulation area	360		To be addressed in IRP Site 8 <sup>3</sup> .	5A <sup>4</sup>	6
IRP 8	105	FA in IRP <sup>3</sup>	< 90-day accumulation area	360		To be addressed in IRP Site 8 <sup>3</sup> .	5A <sup>4</sup>	6
IRP 8	106	FA in IRP <sup>3</sup>	< 90-day accumulation area	360		To be addressed in IRP Site 8 <sup>3</sup> .	5A <sup>4</sup>	6
TAA 371A	107	NFA	< 90-day accumulation area	371	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	2
UST T10	108	NFA	Underground storage tank	T-10		Spill containment tank	5A	7

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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
	109	NFA	< 90-day accumulation area	379		Source: SPCC map (no date) <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	4A <sup>4</sup>	NA
RFA 110	110	FA	Vehicle wash rack	386	X	RFA recommended repair of cracks in pavement	4A	6
OWS 386B	112	NFA	Oil/water separator	386	X	RFA recommended NFA	4A	7
UST 386C	113	NFA	Underground storage tank	386	X	Combined with SWMU/AOC 112	4A	7
TAA 386	114	NFA	< 90-day accumulation area	386		Source: 1980 DHS photograph; no evidence of release. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
TAA 388A	116	NFA	< 90-day accumulation area	388	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	3
UST 388B	117	NFA	Underground storage tank	388		Fuel tank, not waste	4A	7
OWS 388C	118	NFA	Oil/water separator	388		Location not known <sup>5</sup>	4A	7
TAA 389A	119	NFA	< 90-day accumulation area	389		No evidence of release. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	2
RFA 120	120	NFA	Vehicle wash rack	390	X	RFA recommended NFA	3A	3
	121	NFA	Drum storage area	390		Source: 1989 RWQCB letter <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3A <sup>4</sup>	NA
TAA 390A	122	NFA	< 90-day accumulation area	390		Source: 1980 DHS photograph; no evidence of release. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	2
TAA 392A	124	NFA	< 90-day accumulation area	392	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	2A	3
RFA 125	125	NFA	< 90-day accumulation area	415	X	RFA recommended NFA	2B	2
TAA 442	126	NFA	< 90-day accumulation area	442		New site; no evidence of release. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	2

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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
TAA 445	127	NFA	< 90-day accumulation area	445		No evidence of release. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
RFA 128	128	NFA	Storage area	445		Waste stored inside building	4A	2
UST 445C	129	NFA	Underground storage tank	445	X	RFA recommended NFA	4A	7
TAA 447	130	NFA	< 90-day accumulation area	447	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	3
RFA 131	131	FA	Engine test cell	447	X	No field activities performed. Sufficient data in RFA. Transfer to the RAC for limited surface soil clean up of SVOCs (draft final RFA addendum, 1995).	3A	6*
OWS 447C	132	NFA	Oil/water separator	447	X	RFA recommended NFA	3A	7
	133	NFA	< 90-day accumulation area	453		Source: SPCC map (no date) <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3A <sup>4</sup>	NA
	134	NFA	< 90-day accumulation area	454		Source: SPCC map (no date) <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3A <sup>4</sup>	NA
TAA 456	135	NFA	< 90-day accumulation area	456		No evidence of release. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	2
RFA 136	136	NFA	Aircraft wash area	461		Located on tarmac	5A	1
UST 461	137	NFA	Underground storage tank	461	X	RFA recommended NFA	5A	7
TAA 461	138	NFA	< 90-day accumulation area	461	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	2
UST 462	139	NFA	Underground storage tank	462	X	RFA recommended NFA	5A	7
TAA 462	140	NFA	< 90-day accumulation area	462		Located on tarmac. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	2
RFA 141	141	NFA	Aircraft wash area	463		Surface free of defects	5A	1
	142	NFA	Drum storage area	463		Source: 1989 RWQCB letter <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	5A <sup>4</sup>	NA



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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
UST 493	143	-	Underground storage tank	493		Location not known <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	NL	7
TAA 529	144	NFA	< 90-day accumulation area	529	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995); evaluation of removal and/or decontamination strategy proposed.	4A	2
UST 529	145	FA	Underground storage tank	529	X	LUFT levels exceeded; RFA recommended additional borings	4A	6
TAA 534	146	NFA	< 90-day accumulation area	534		Stored inside building. Site visited for draft final RFA Addendum (BNI, 1995); evaluation of removal and/or decontamination strategy proposed.	4B	2
TAA 602	147	NFA	< 90-day accumulation area	602	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995); evaluation of removal and/or decontamination strategy proposed.	2A	3
OWS 602	148	NFA	Oil/water separator	602		Location not known <sup>5</sup>	2A	7
TAA 605	149	NFA	< 90-day accumulation area	605	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995); evaluation of removal and/or decontamination strategy proposed.	5A	3
RFA 150	150	NFA	Aircraft wash area	605		Located on tarmac	5A	1
OWS 605C	151	FA	Oil/water separator	605	X	RFA recommended leak test/inspection of OWS	5A	7
RFA 152	152	NFA	Aircraft wash area	606		Located on tarmac	5A	1
UST 625	156	FA in IRP <sup>6</sup>	Underground storage tank	625		Located in IRP Site 20 <sup>7</sup>	1B	7
IRP 20	157	FA in IRP <sup>3</sup>	Vehicle wash rack	626		Located in IRP Site 20 <sup>7</sup>	1B <sup>4</sup>	6
TAA 626	158	FA in IRP <sup>6</sup>	< 90-day accumulation area	626		Located in IRP Site 20 <sup>7</sup> . Plotted as IRP Site 20, but not as a <90-day accumulation area on Figure 3-1 and Figure 3-4.	1B	7
OWS 626-1	159	FA in IRP <sup>6</sup>	Oil/water separator	626		Located in IRP Site 20 <sup>7</sup>	1B	7
TAA 636	160	NFA	< 90-day accumulation area	636	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995); evaluation of removal and/or decontamination strategy proposed.	3A	3
UST 643A	162	NFA	Underground storage tank	643	X	RFA recommended NFA	5A	7
OWS 643B	163	NFA	Oil/water separator	643	X	Combined with SWMU/AOC 162	5A	7

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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
RFA 164	164	NFA	Vehicle wash rack	651	X	RFA recommended NFA	1G	3
TAA 651	165	NFA	< 90-day accumulation area	651	X	Located on/combined with SWMU/AOC 164. Six soil samples collected at 2 locations; a "release" was not detected. NFA recommended (draft final RFA addendum, 1995).	1G	3*
UST 651-5	166	NFA	Underground storage tank	651		No sampling, based on 1990 tank test (product oil)	1G	7
UST 651-6	167	NFA	Underground storage tank	651		No sampling, based on 1990 tank test (product oil)	1G	7
UST 651-7	168	NFA	Underground storage tank	651		No sampling, based on 1990 tank test	1G	7
OWS 651-8	169	NFA	Oil/water separator	651	X	Combined with SWMU/AOC 164	1G	7
	170	NFA	Drum storage area	655		Source: 1989 RWQCB letter <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	4A <sup>4</sup>	NA
TAA 658	171	NFA	< 90-day accumulation area	658	X	Four soil samples collected; SVOCs detected below PRGs at about 8.5 feet, confirming CLEAN I results; a "release" was not detected. NFA recommended (draft final RFA addendum, 1995).	2A	3*
TAA 671	172	NFA	< 90-day accumulation area	671	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
OWS 671	173	FA	Oil/water separator	671	X	LUFT levels exceeded. RFA recommended additional borings	4A	6
UST 672	174	NFA	Underground storage tank	672		Exact location not known <sup>5</sup> EG&G field inspection conducted in 1993	4A	7
OWS 672A	175	FA	Oil/water separator	672	X	LUFT levels exceeded. RFA recommended additional borings	4A	6
UST 672B	176	FA	Underground storage tank	672	X	LUFT levels exceeded. RFA recommended additional borings	4A	6
TAA 672	177	NFA	< 90-day accumulation area	672		Product storage. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
RFA 178	178	NFA	Vehicle wash rack	673		No evidence of release	3A	1
OWS 673A	179	NFA	Oil/water separator	673	X	RFA recommended NFA	3A	7
UST 673B	180	NFA	Underground storage tank	673	X	Combined with SWMU/AOC 179	3A	7

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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
RFA 181	181	NFA	Landfarming area	673	X	RFA recommended NFA	3B	3
	182	NFA	Drum storage area	673		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3B <sup>4</sup>	NA
	183	NFA	Drum storage area	673		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3B <sup>4</sup>	NA
	184	NFA	Drum storage area	673		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3B <sup>4</sup>	NA
	185	NFA	Drum storage area	673		Source: 1980 DHS photograph <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	3B <sup>4</sup>	NA
TAA 673	186	NFA	< 90-day accumulation area	673	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995); evaluation of removal and/or decontamination strategy proposed.	3A	2
UST 674A	187	NFA	Underground storage tank	674	X	RFA recommended NFA	4B	7
UST 675A	188	NFA	Underground storage tank	675	X	RFA recommended NFA	4B	7
OWS 674	189	NFA	Oil/water separator	674	X	Combined with SWMU/AOC 187	4B	7
UST 706	191	NFA	Underground storage tank	706		Location not known (demolished in 1987) <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	NL	7
UST 716A	192	NFA	Underground storage tank	716		No sampling, based on 1990 tank test	5A	7
OWS 716B	193	NFA	Oil/water separator	716	X	RFA recommended NFA	5A	7
IRP 3	194	FA in IRP	Former Incinerator Site	746	X	To be addressed in IRP Site 3	2A	6
RFA 195	195	NFA	Vehicle wash rack	758	X	RFA recommended NFA	4A	2
OWS 758A	196	NFA	Oil/water separator	758	X	RFA recommended NFA	4A	7
UST 758B	197	NFA	Underground storage tank	758	X	Combined with SWMU/AOC 196	4A	7
RFA 198	198	FA	Vehicle wash rack	759	X	RFA recommended repair of cracks in pavement	4A	6
OWS 759A	199	FA	Oil/water separator	759	X	RFA recommended leak test/inspection of OWS	4A	7
UST 759B	200	FA	Underground storage tank	759	X	Combined with SWMU/AOC 199	4A	7
RFA 201	201	FA	Vehicle wash rack	760	X	RFA recommended repair of cracks in pavement	4A	6
UST 760A	202	NFA	Underground storage tank	760	X	RFA recommended NFA	4A	7

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Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
OWS 760B	203	NFA	Oil/water separator	760	X	Combined with SWMU/AOC 202	4A	7
RFA 204	204	FA	Vehicle wash rack	761	X	RFA recommended repair of cracks in pavement	5A	6
OWS 761A	205	NFA	Oil/water separator	761	X	RFA recommended NFA	5A	7
UST 761B	206	NFA	Underground storage tank	761	X	Combined with SWMU/AOC 205	5A	7
OWS 762A	208	NFA	Oil/water separator	762	X	RFA recommended NFA	3A	7
UST 762B	209	NFA	Underground storage tank	762	X	Combined with SWMU/AOC 208	3A	7
RFA 210	210	NFA	Vehicle wash rack	763		Surface free of defects	5A	1
OWS 763A	211	NFA	Oil/water separator	763	X	RFA recommended NFA	5A	7
UST 763B	212	NFA	Underground storage tank	763	X	Combined with SWMU/AOC 211	5A	7
RFA 213	213	FA	Vehicle wash rack	764	X	RFA recommended repair of cracks in pavement	2A	6
UST 764A	214	NFA	Underground storage tank	764	X	RFA recommended NFA	2A	7
OWS 764B	215	NFA	Oil/water separator	764	X	Combined with SWMU/AOC 214	2A	7
RFA 216	216	NFA	Vehicle wash rack	765		Surface free of defects	1A	1
UST 765A	217	FA in IRP <sup>6</sup>	Underground storage tank	765		Located in IRP Site 13 <sup>6</sup>	1A	7
OWS 765B	218	FA in IRP <sup>6</sup>	Oil/water separator	765		Located in IRP Site 13 <sup>6</sup>	1A	7
RFA 219	219	NFA	Vehicle wash rack	766		Surface free of defects	1A	1
OWS 766A	220	NFA	Oil/water separator	766	X	RFA recommended NFA	1A	7
UST 766B	221	NFA	Underground storage tank	766	X	Combined with SWMU/AOC 220	1A	7
TAA 769	222	NFA	< 90-day accumulation area	769	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
TAA 770	223	NFA	< 90-day accumulation area	770	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	3

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TAA 771	224	NFA	< 90-day accumulation area	771	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	1D	2
TAA 772	225	NFA	< 90-day accumulation area	772	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3F	3
TAA 778	226	NFA	< 90-day accumulation area	778	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	3
TAA 779	227	NFA	< 90-day accumulation area	779	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	3
UST T9	228	NFA	Underground storage tank	779		Recently installed fuel slop tank	5A	7
TAA 800	229	NFA	< 90-day accumulation area	800	X	Sump is a 2 inch-diameter PVC pipe and cap that appears tight (holds water), insufficient volume of sludge in pipe to perform an analysis. NFA recommended (draft final RFA addendum 1995).	4B	2
UST 800D	230	NFA	Underground storage tank	800		No sampling, based on 1990 tank test	4B	7
UST 800E	231	NFA	Underground storage tank	800	X	RFA recommended NFA	4B	7
OWS 800F	232	NFA	Oil/water separator	800	X	RFA recommended NFA	4B	7
OWS 817	233	NFA	Oil/water separator	817	X	RFA recommended NFA	3F	7
TAA 856	234	NFA	< 90-day accumulation area	856	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	3
TAA 761	236	FA in IRP <sup>6</sup>	< 90-day accumulation area	1663		Located in IRP Site 6 <sup>6</sup>	5A <sup>4</sup>	7
	237	NFA	< 90-day accumulation area	1700		Source: SPCC map (no date) <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	NL	NA
	238	NFA	< 90-day accumulation area	1727		Source: SPCC map (no date) <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	4A <sup>4</sup>	NA
	239	NFA	Drum storage area	1798		Source: 1989 RWQCB letter <sup>5</sup> . SWMU not plotted on Figure 3-1 or 3-4.	2B <sup>4</sup>	NA

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TAA 155A	240	NFA	< 90-day accumulation area	155		No evidence of release. Site visited for draft final RFA Addendum (BNL, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	2
TAA 155B	241	NFA	< 90-day accumulation area	155	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNL, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	3
TAA 371B	242	NFA	< 90-day accumulation area	371	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNL, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	3
RFA 243	243	NFA	Wash rack	96	X	RFA recommended NFA	4A	3
PCB T74	244	FA	PCB spill area	457	X	No field activities performed. Sufficient data in RFA. Recommended transfer to the RAC contractor for limited surface soil cleanup of PCBs (draft final RFA)	3A	6*
RFA 245	245	NFA	Golf course	464		Treated sanitary wastewater applied	3F	1
RFA 246	246	NFA	Golf course irrigation tank	459		Stored treated sanitary wastewater	3F	1
RFA 247	247	NFA	Irrigation pipeline	SW and SE quadrants		Transferred from former sewage treatment plant to irrigation tank at golf course. Not plotted on Figure 3-1 or Figure 3-4.	NA	1
OWS 845	248	NFA	Oil/water separator	463	X	RFA recommended NFA	3A	7
UST 463	249	NFA	Underground storage tank	463	X	RFA recommended NFA	5A	6
UST 655	250	NFA	Underground storage tank	655	X	RFA recommended NFA	4A	2*
TAA 388B	251	NFA	< 90-day accumulation area	388		No evidence of release/surface defects. Site visited for draft final RFA Addendum (BNL, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	2
TAA 398	252	NFA	< 90-day accumulation area	398	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNL, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	3
RFA 253	253	NFA	Wash rack	317	X	RFA recommended NFA	4B	2
TAA 359A	254	NFA	< 90-day accumulation area	359		No evidence of release. Site visited for draft final RFA Addendum (BNL, 1995): evaluation of removal and/or decontamination strategy proposed.	4B	2

**Table 3-13  
Summary of SWMUs/AOCs  
(Sheet 15 of 18)**

Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
TAA 606	255	NFA	< 90-day accumulation area	606	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	5A	2
TAA 441	256	NFA	< 90-day accumulation area	441	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	3
RFA 257	257	NFA	Wash water runoff site	575	X	RFA recommended NFA	5A	2
RFA 258	258	NFA	Wash water runoff site	577	X	RFA recommended NFA	5A	2
TAA 389B	259	NFA	< 90-day accumulation area	389		Drum storage not confirmed. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	2
RFA 260	260	NFA	Aboveground storage tank (former)	389	X	RFA recommended repair of cracks in pavement. Two soil samples collected; diesel detected at one location in one sample below action levels; a "release" was not detected. NFA recommended (draft final RFA addendum 1995).	3A	3*
TAA 390B	261	NFA	< 90-day accumulation area	390	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3A	3
RFA 262	262	NFA	Fuel storage area	390	X	RFA recommended NFA	3A	2
UST 374A	263	NFA	Underground storage tank	374	X	RFA recommended NFA	3A	3*
RFA 264	264	NFA	Equipment storage area	DRMO Lot #3	X	RFA recommended NFA; DTSC recommended additional sampling. No field activities performed. NFA recommended (draft final RFA addendum 1995).	3B	2*
IRP 24	265	NFA	Metal plating sewer lines 23	SW quadrant of Station	X	RFA recommended NFA	NA	6
TAA 765	266	NFA	< 90-day accumulation area	765		Surface free of defects. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	3F	2
RFA 267	267	NFA	Drop tank fuel storage area	605		Additional investigation recommended by DTSC <sup>1</sup> . RFA recommended NFA; DTSC recommended additional sampling. No field activities performed. NFA recommended (draft final RFA addendum 1995).	5A	2

**Table 3-13  
Summary of SWMUs/AOCs  
(Sheet 16 of 18)**

Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
RFA 268	268	NFA	Vehicle wash rack	240		Surface free of defects	1A	1
TAA 314	269	NFA	< 90-day accumulation area	314	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	4A	3
RFA 270	270	NFA	Wash rack	817	X	RFA recommended NFA	3F	2
TAA 392B	271	NFA	< 90-day accumulation area	392	X	RFA recommended NFA. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	2A	3
TAA 31A	272	NFA	< 90-day accumulation area	31	X	RFA recommended NFA. Site visited for RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	1D	3
RFA 273	273	NFA	Wash rack	31	X	RFA recommended NFA	1D	2
RFA 274	274	NFA	Stockpiled soil	31		No evidence of release	1D	1
UST 186	275	NFA	Underground storage tank	Tank Farm 1	X	RFA recommended NFA	1D	7
UST 187	276	NFA	Underground storage tank	Tank Farm 1	X	RFA recommended NFA	1D	7
UST 188	277	NFA	Underground storage tank	Tank Farm 3	X	RFA recommended NFA	1A	7
UST 190	278	NFA	Underground storage tank	Tank Farm 3	X	RFA recommended NFA	1A	7
UST 193	279	NFA	Underground storage tank	Tank Farm 3	X	RFA recommended NFA	1A	7
UST 195	280	FA	Underground storage tank	Tank Farm 3	X	LUFT levels exceeded; RFA recommended additional borings	1A	6
UST 252	281	NFA	Underground storage tank	252		Location not known (inactive) <sup>5</sup>	NL	7
UST 322B	282	NFA	Underground storage tank	322	X	RFA recommended NFA; tank removal soil samples exceeded LUFT levels	4B	6
UST 326B	283	NFA	Underground storage tank	326	X	RFA recommended NFA	4A	7
UST 347D	284	NFA	Underground storage tank	347D		Inactive, tank filled with sand <sup>5</sup>	1B	7
UST 399	285	NFA	Underground storage tank	399		Inactive <sup>5</sup>	5A	7
UST 733B	286	NFA	Underground storage tank	733	X	RFA recommended NFA	1G	7



**Table 3-13  
Summary of SWMUs/AOCs  
(Sheet 17 of 18)**

Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
UST 733C	287	NFA	Underground storage tank	733	X	RFA recommended NFA	1G	7
UST 850A	288	FA in IRP <sup>6</sup>	Underground storage tank	850A		Located in IRP Site 16 <sup>6</sup>	5A	7
UST 850B	289	FA in IRP <sup>6</sup>	Underground storage tank	850B		Located in IRP Site 16 <sup>6</sup>	5A	7
UST 850C	290	FA in IRP <sup>6</sup>	Underground storage tank	850C		Located in IRP Site 16 <sup>6</sup>	5A	7
OWS 96	291	NFA	Oil/water separator	96	X	RFA recommended NFA	4A	7
OWS 675B	292	NFA	Oil/water separator	675	X	Combined with SWMU/AOC 188	5A	7
RFA 293	293	NFA	Cleaning tank	130		Surface free of defects	2A	2
TAA 130A	294	NFA	< 90-day accumulation area	130		Surface free of defects. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	2A	2
TAA 130B	295	NFA	< 90-day accumulation area	130		Surface free of defects. Site visited for draft final RFA Addendum (BNI, 1995): evaluation of removal and/or decontamination strategy proposed.	2A	2
OWS 357	296	NFA	Oil/water separator	357	X	RFA recommended NFA	4A	7
RFA 297	297	NFA	Former asphalt pavement plant	Northeast of golf course		No remaining evidence of plant	5A	1
UST 392A	298	FA	Underground storage tank	392	X	RFA recommended leak test/inspection of UST	2A	7
RFA 299	299	NFA	Wash rack	800		Surface free of defects	4B	1
IRP 3	300	FA in IRP	Spill area east of SWMU/AOC 194	746	X	To be addressed in IRP Site 3	2A	6
RFA 301	301	NFA	Mark arrest system	East side of Runway 34R	X	RFA recommended NFA	5A	2
RFA 302	302	NFA	Mark arrest system	West side of Runway 34R	X	RFA recommended NFA	5A	2
UST 359A	303	NFA	Underground storage tank	359	X	RFA recommended NFA	4B	2*
RFA 304	304	NFA	Trenches inside Bldg. 359	359		Inside building; no evidence of release	4B	1
RFA 305	305	NFA	Septic tank	601		Sanitary waste	5C	1
RFA 306	306	NFA	Septic tank	687		Sanitary waste	1F	1

**Table 3-13  
Summary of SWMUs/AOCs  
(Sheet 18 of 18)**

Database Tracking	SWMU/AOC Number <sup>1</sup>	RFA Recommendation	Type	Location, Building, or Number	Sampling Visit	Comments	Parcel	ECP Area Type <sup>2</sup>
RFA 307	307	NFA	Septic tank	819		Sanitary waste	1F	1

Source: Jacobs, 1993. MCAS El Toro Final RCRA Facility Assessment Report.  
Bechtel National, Inc., 1995. MCAS El Toro Draft Final Addendum to the RCRA Facility Assessment (Volume 6 of the Final RFA Report).  
SAIC 1994. Draft Oil and Hazardous Substances Spill Prevention and Countermeasure Plan and Contingency Plan (SPCC)

Notes: <sup>1</sup> SWMU/AOCs identified as duplicate locations (29, 36, 37, 86, 87, 111, 115, 123, 153, 154, 155, 161, 190, 207, and 235) and those identified as MCAS Tustin (34, 53, and 54) are not included in this table. Refer to Table 4-1 of the final RFA report dated 16 July 1993 for a complete list of SWMUs/AOCs.

<sup>2</sup> Area Types marked with an asterisk (\*) are pending BCT approval.

<sup>3</sup> SWMU/AOC is located within RI/FS site boundaries and, therefore, was not evaluated in the RFA. These SWMUs/AOCs are being addressed under the IRP.

<sup>4</sup> These sites were not plotted on the GIS map because they were not evaluated under the PR/VSI. The parcels listed correspond to the nearest building location.

<sup>5</sup> SWMU/AOC could not be accurately located or identified from the records review information and the visits conducted as part of the RFA.

<sup>6</sup> SWMU/AOC is located within RI/FS site boundaries; however, it will be addressed in a closure-related compliance program.

<sup>7</sup> DTSC recommended further investigation based on PR/VSI description, which stated that the drop tank storage area was located on damaged asphalt. This area is actually concrete-paved (tarmac); therefore, it was not recommended for sampling during the RFA. No further investigation is anticipated at this SWMU/AOC.

Abbreviations: DTSC - State of California Department of Toxic Substances Control  
ECP - environmental condition of property  
FA - further action  
IRP - Installation Restoration Program  
LUFT - Leaking Underground Fuel Tank  
NA - not applicable. The SWMU/AOC is a large unit that is located in several different parcels.  
NEESA - Naval Energy and Environmental Support Activity  
NFA - no further action  
NL - not located. Unable to locate building or device on historical plans for MCAS El Toro.  
NW - northwest  
OWS - oil/water separator  
PCB(s) - polychlorinated biphenyl(s)  
PR/VSI - Preliminary Review/Visual Site Inspection  
PRG - US EPA Preliminary Remediation Goals  
RAC - remedial action contractor  
RFA - RCRA Facility Assessment  
RWQCB - Regional Water Quality Control Board  
SE - southeast  
SPCC - Spill Prevention and Counter Measure Plan and Contingency Plan  
SVOC - semivolatile organic compounds

**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 1 of 11)**

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 96	96	4A	96	Unknown	Unknown/ Unknown	Unknown	From RFA: SWMU 291-NFA. From LCR: Appears to be abandoned. Two vertical below grade pipes/ports observed in the wash rack. Unsure if OWS is located here.	No further action recommended in the RFA based on soil sample results. Termination of washing activities recommended in LCR	LC	Unknown	Oil/water	Unknown	X	B,C,D	7
OWS 240C	240C	1A	240	1982	100/ Steel	Active	From RFA: SWMU 66 - (comb w/SWMU 65)-NFA. In the LCR, OWS adjacent to a UST was full of waste oil and did not appear to be used	No further action recommended in the RFA based on soil sample results. If the wash rack and OWS are to be abandoned, the LCR recommendations were to remove the OWS and its contents, fill the excavation, and pave the area to grade.	LC		Oil/water	Yes (UST 240B)	X	A,B,C,D	7
OWS 244	244	5A	244	1944	100/ Concrete	Active	From RFA: SWMU 68-not sampled; no evidence of a OWS was observed.		LC		Oil/water	Unknown		A,B,D	7
OWS 280A	280A	1B	280	Unknown	200/ Concrete	Active	The OWS appeared structurally sound.	Maintenance and repair work at the OWS was recommended in LCR.	LC			No		C	7
OWS 297B	297B	5A	297	1982	100/ Steel	Active	From RFA: SWMU 76-NFA. SWMU 77 (UST 297C) is the tank associated with the OWS.	No further action recommended in the RFA based on soil sample results	S		Oil/water	Yes (UST 297C)	X	A,B,D	7
OWS 298C	298C	4A	298	1982	100/ Steel	Active	SWMU 84 - FA. From LCR: OWS appeared sound. ~ 5-20 gpm of waste produced. Electric butterfly valves at OWS which are not fully functional results in flows to storm drain.	Further investigation of the OWS current condition by leak testing and inspection is recommended in the RFA.	S		Oil/water	Yes (UST 298D)	X	A,B,C,D	7
OWS 314C	314C	4A	314	Unknown	2,200/ Concrete	Inactive	From LCR: OWS not in use; upstream drains cemented. Structural condition was sound.	LCR suggests OWS could be removed and the excavation filled in, compacted and covered with asphalt.	LC	Unknown	Oil/water	No		C	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 2 of 11)**

Database Tracking	OWS Number	Parcel	Location/Nearest Building Number	Year Installed	Capacity (gal)/Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/Removal/Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 324-1	324-1	4A	324	Unknown	Unknown/Steel	Inactive	From LCR: OWS no longer used; internal drains cemented. Structural condition was rusty. Contents from OWS can be pumped through a threaded fitting to a port on parking lot. Appears to be no longer maintained.	LCR suggests OWS could be removed and the excavation filled in, compacted and covered with asphalt. OWS slated for removal according to El Toro staff.	LC	Unknown	Oil/water	No		C	7
OWS 324-2	324-2	4A	324	Unknown	Unknown/Steel	Inactive	From LCR: OWS no longer used; internal drains cemented. Structural condition was rusty. Contents from OWS can be pumped through a threaded fitting to a port on parking lot. Port appears to be no longer maintained.	LCR suggests OWS could be removed and the excavation filled in, compacted and covered with asphalt. OWS slated for removal according to El Toro staff.	LC	Unknown	Oil/water	No		C	7
OWS 357	357	4A	357	Unknown	200/Steel	Unknown	SWMU 296-NFA. From LCR: unknown if OWS still in use. OWS condition was rusty, disconnected at head pipes. OWS scheduled for repairs according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The Law/Crandall recommendations were to either repair the OWS inlet lines or abandon the OWS, plug the floor drains with cement, and remove the external water source	LC	Unknown	Oil/water	No	X	B,C,D	7
OWS 359B	359B	4B	359	1952	100/Concrete	Active	From RFA: SWMU 101-NFA.	No further action recommended in the RFA based on soil sample results.	LC		Oil/water	Unknown	X	A,B,D	7
OWS 371	371	3A	371	Unknown	2,350/Steel	Active	From LCR: OWS condition unknown. Waste oil level alarm in place (on during survey). OWS scheduled for maintenance/cleaning according to El Toro staff.	The OWS should be pumped out according to the LCR.	LC		Oil/water	No		C	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 3 of 11)**

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 386B	386B	4A	386	1982	100/ Steel	Active	From RFA: SWMU 112-NFA. From LCR: Vault full of sediment. OWS condition appeared sound. Steel UST adjacent to OWS. Butterfly valves not functioning properly-flows to storm drain. OWS under repair in 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The OWS should be cleaned and the electrical valves tested to determine what repairs are needed per the LCR.	LC		Oil/water	Yes (UST 386C)	X	A,B,C,D	7
OWS 388C	388C	4A	388	1955	100/ Steel	Active	From RFA: SWMU 118-not sampled; OWS not located on NW side of Bldg 388. From LCR: OWS buried with sediment - unable to access. Non-functioning butterfly valves causing discharge to storm drains. OWS under construction/repair according to El Toro staff.	The OWS should be cleaned and the electrical valves tested to determine what repairs are needed per the LCR.	S		Oil/water	Yes (UST 388B)		A,B,C,D	7
OWS 445	445	4A	445	Unknown	Unknown/ Precast Concrete	Inactive	From LCR: OWS does not appear to be used; building used for storage. During survey OWS covered by heavy box.	If hazardous materials exist in OWS, the materials should be removed and the OWS closed, per the LCR. OWS slated for removal according to El Toro staff.	LC	Unknown	Oil/water	No		C,F	7
OWS 447C	447C	5A	447	1959	800/ Precast Concrete	Active	From RFA: SWMU 132-NFA: covers which may belong to an OWS identified. Listed as 100-gal steel OWS in Station database. From LCR: precast concrete, 800-gal; appears sound. Flow modification from OWS to sanitary sewer scheduled according to El Toro staff.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	No	X	A,B,C,D,F	7
OWS 461A	461A	5A	461	Unknown	50/ Steel	Active	OWS scheduled for maintenance work according to El Toro staff.	The LCR suggests the OWS should be opened and inspected for sediment and sludge buildup.	LC		Oil/water	Unknown		C,F	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 4 of 11)**

Database Tracking	OWS Number	Parcel	Location/Nearest Building Number	Year Installed	Capacity (gal)/Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/Removal/Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 462	462A	5A	462	Unknown	50/ Steel	Active			LC		Oil/water	Unknown		C	7
OWS 602	602	2A	602	1964	Unknown/ CC	Inactive	From RFA: SWMU 148-not sampled; no OWS observed during visit; could be OWS at Bldg 764 located 100 ft west of Bldg. 602.	OWS scheduled for removal per 1993 Station UST Inventory.	SB		Oil/water	Unknown		A,B,D,F	7
OWS 605C	605C	5A	605	1984	300/ Steel	Active	From RFA: SWMU 151-FA; concrete area around OWS appeared darkly stained. From LCR: 300-gal cap.; ~125-gal dry UST adjacent to OWS. OWS scheduled for repairs according to El Toro staff.	Further investigation of the OWS current condition by leak testing and inspection was recommended by the RFA. Sediments should be removed from the OWS, and electrical diversion valves installed. The waste oil pump should be replaced per the LCR.	LC		Oil/water	Unknown	X	A,B,C,D,F	7
OWS 606C	606C	5A	606	1965	100/ Concrete	Active	From RFA: SWMU 154-not sampled; OWS thought to be OWS 643B; drains leading to OWS 643B located 10 ft south of Bldg 606.		LC		Oil/water	Unknown		A,B,D	7
OWS 626-1	626-1	1B	625	1967	600/ Concrete	Active	SWMU 159-not sampled; located within RI/FS Site 20 boundaries. From LCR: 600-gal cap., precast concrete, fuel odor emitted; top portion of OWS and surrounding slab cracked. OWS scheduled for repairs according to El Toro staff.	Oil staining observed downgradient of catch basin indicating catch basin is releasing oil according to LCR. The LCR suggests increasing the capture efficiency of the catch basin.	LC		Oil/water	No		A,B,C,D,F	7
OWS 626-2	626-2	1B	625	Unknown	580/ Steel	Active	From LCR: OWS appears sound.		LC		Oil/water	No		C	7
OWS 626-3	626-3	1B	625	Unknown	835/ Concrete	Active	From LCR: heavy oil accumulation; OWS appears sound.		LC		Oil/water	No		C	7
OWS 626-4	626-4	1B	625	Unknown	560/ Concrete	Active	From LCR: OWS appears sound.		LC		Oil/water	No		C	7

**Table 3-14  
Oil/Water Separator Inventory  
(Sheet 5 of 11)**

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 643B	643B	5A	643	1982	100/ Steel	Active	From RFA: SWMU 163- not sampled - see comments for OWS 606C; drain to OWS 643B located 10 ft south of Bldg 606. From LCR: 100-gal, steel OWS; appears sound; adjacent to full UST.	The LCR suggests removing sediments and oils and cleaning OWS. OWS slated for removal according to El Toro staff.	LC		Oil/water	Yes (UST 643A)		A,B,C,D,F	7
OWS 651-8	651-8	1G	651	1971	280/ Concrete	Active	SWMU 169-not sampled; antifreeze observed in washrack drain. Listed as a 500-gal concrete OWS in Station database. From LCR: 280-gal precast concrete OWS; appears sound; listed as OWS # 650/651. OWS scheduled for maintenance according to El Toro staff.	The LCR suggests removing oils from OWS and cleaning OWS.	LC		Oil/water	No		A,B,C,D,F	7
OWS 658C	658C	2A	658	1972	400/ Concrete	Active	Listed as a 100-gal OWS in Station database. From LCR: 400-gal OWS in use; OWS appears sound.		LC		Oil/water	No		A,B,C,F	7
OWS 658D	658D	2A	658	1995	1,750/ Concrete	Active	Set up in service with OWS 658C		LC		Oil/water	No		G	7
OWS 671	671	4A	671	Unknown	Unknown/ Unknown	Active	From RFA: SWMU 173- FA.	RFA recommended additional borings.	LC		Oil/water	Unknown	X	B,D	6
OWS 672A	672A	4A	672	1982	400/ Steel	Active	SWMU 175-FA; listed as a 1,000-gal steel OWS; eroded asphalt around tank cover. From LCR: 400-gal metal/concrete OWS; appears sound; OWS backs up during heavy washing. El Toro staff list this OWS as under construction/repair.	RFA recommended additional borings. The LCR suggests sediments in OWS be removed, lines be cleaned and frequent inspection and maintenance be implemented.	S		Oil/water	Yes (UST 672B)	X	A,B,C,D,F	6

**Table 3-14  
Oil/Water Separator Inventory  
(Sheet 6 of 11)**

Database Tracking	OWS Number	Parcel	Location/Nearest Building Number	Year Installed	Capacity (gal)/Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/Removal/Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 673A	673A	3A	673	1982	895/ Concrete	Active	From RFA: SWMU 179-NFA; stained asphalt noted nearby. Listed as a 100-gal steel OWS in Station database. From LCR: 895 gal concrete OWS; OWS appears sound. Float/alarm installation scheduled for this OWS, according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The LCR recommends the OWS be cleaned.	S -		Oil/water	No	X	A,B,C,D,F	7
OWS 674	674	4B	674	Unknown	1,400/ Steel	Active	From RFA: SWMU 189-NFA; aboveground OWS. From LCR: OWS appears sound; Adjacent to OWS is a 550-gal #7 gauge steel UST; OWS to Bee Canyon Wash. Bee Canyon Discharge Point #002 from NPDES permit issued by the RWQCB.	No further action recommended in the RFA based on soil sample results. Installation of a check dam to capture dry weather flows is recommended in the LCR.	LC		Oil/water	Yes (UST 674)	X	A,B,C,D,F	7
OWS 674B	674	4B	674	1,995	52/ Steel	Active	Set up in service with OWS 674.		LC		Oil/water	No		G	7
OWS 675B	675B	4B	675	Unknown	1,400/ Steel	Active	From RFA: SWMU 292-comb w/SWMU 188-NFA; aboveground OWS. From LCR: OWS for Agua Chino Wash; OWS appears sound; Adjacent to OWS is a 550-gal #7 gauge steel UST.	No further action recommended in the RFA based on soil sample results. Installation of a check dam to capture dry weather flows and clearing of the channel is recommended in the LCR.	LC		Oil/water	Yes (UST 675A)	X	A,B,C,D,F	7
OWS 675C	675C	4B	675	1,995	52/ Steel	Active	Set up in service with OWS 675B.		LC		Oil/water	No		G	7
OWS 676	676	2B	676	Unknown	Unknown/ Unknown	Unknown	OWS not observed in the area of Bldg. 676. The LCR reported access could not be gained to a fenced-off area adjacent to the building. It is possible that an OWS is hidden under trash cans stored in this area.	No further action recommended in the RFA based on soil sample results.	SB		Oil/water		X	B,C	7



**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 7 of 11)**

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 696	696	5A	696	Unknown	Unknown/ Unknown	Unknown	From RFA: SWMU 163- not sampled; OWS 643B located between Bldgs. 643 and 696.		LC		Oil/water	Unknown		B,D	7
OWS 716B	716B	5A	716	1976	100/ Steel	Active	From RFA: SWMU 193- NFA. Concrete OWS listed in 1993 Station UST Inventory. From LCR: Steel OWS (cap. unknown); couldn't be accessed, cover was rusted shut; a 3000-gal fiberglass UST is located 75 feet from Bldg. 716.	No further action recommended in the RFA based on soil sample results. Inspection and maintenance of the OWS is recommended in the LCR.	LC		Oil/water	Yes (716A)	X	A,B,C,D	7
OWS 744	744	1G	744	Unknown	500/ Concrete	Active	From LCR: OWS appears sound. OWS scheduled for repair & maintenance work according to El Toro staff. Flow from OWS will also be rerouted to the sanitary sewer		LC		Oil/water	No		C,F	7
OWS 758A	758A	4A	758	1982	100/ Steel	Active	From RFA: SWMU 196- NFA. From LCR: OWS appears sound. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Yes (UST 758B)	X	A,B,C,D,F	7
OWS 759A	759A	4A	759	1982	100/ Steel	Active	From RFA: SWMU 199- FA. From LCR: OWS appears sound, drain line clogged and waste flows from upgradient clean out. OWS under repair/construction as of 2/94 according to El Toro staff.	Further investigation of the OWS current condition by leak testing and inspection is recommended in the RFA report. Cleaning the OWS and drain lines were recommended in the LCR.	S		Oil/water	Yes (UST 759B)	X	A,B,C,D,F	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 8 of 11)**

Database Tracking	OWS Number	Parcel	Location/Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 760B	760B	4A	760	1982	100/ Steel	Active	From RFA: SWMU 203: comb w/SWMU 202-NFA; discharges waste oil to UST 760A. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Yes (UST 760A)	X	A,B,D,F	7
OWS 761A	761A	5A	761	1982	100/ Steel	Active	SWMU 205-NFA. Listed as active in the Station database. From LCR: OWS status not known; buildings appear abandoned; OWS inundated with water; adjacent UST 1/2 full of water; valve open at storm drain; all discharges to storm drain.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	Yes (UST 761B)	X	A,B,C,D	7
OWS 762A	762A	3A	390	1982	100/ Steel	Active	From RFA: SWMU 208-NFA. From LCR: OWS ID# 390 in LCR; OWS appears sound; adjacent to empty waste oil UST; butterfly valve not functioning-flows to storm drain. OWS under repair/construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The OWS should be cleaned and electrical valves tested to determine what repairs are needed per LCR.	S		Oil/water	Yes (UST 762B)	X	A,B,C,D,F	7
OWS 763A	763A	5A	763	1982	100/ Steel	Active	From RFA: SWMU 211-NFA. From LCR: OWS east of Bldg 698; not in use during survey; new valves being installed; OWS appears sound; UST associated with OWS has 3 feet of water. OWS under repair/construction according to El Toro staff.	No further action recommended in the RFA based on soil sample results. Cleaning the OWS was recommended in the LCR.	LC		Oil/water	Yes (UST 763B)	X	A,B,C,D,F	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
**(Sheet 9 of 11)**

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 764B	764B	2A	764	1982	100/ Steel	Active	From RFA: SWMU 215- comb w/SWMU214-NFA. From LCR: OWS ID# 392 in LCR; UST adjacent to OWS; wash rack slab has numerous cracks. OWS under repair /construction as of 2/94 according to El Toro staff.	No further action recommended in the RFA based on soil sample results. The OWS should be cleaned per LCR.	LC		Oil/water	Yes (UST 764B)	X	A,B,C,D,F	7
OWS 765B	765B	1A	765	1982	100/ Steel	Active	From RFA: SWMU 218- comb w/SWMU 217. From LCR: OWS appears sound but access covers need replacement; 100-gal UST adjacent to OWS	Cleaning the lines to the OWS recommended in the LCR.	LC		Oil/water	Yes (UST 765A)		A,B,C,D	7
OWS 766A	766A	1A	766	1982	100/ Steel	Active	From RFA: SWMU 220- NFA. From LCR: Due to heavy rainfall vault box was flooded; UST adjacent to OWS full of oil.	No further action recommended in the RFA based on soil sample results. Water in vault needs to be pumped out and the OWS inspected and cleaned per LCR.	LC		Oil/water	Yes (UST 766B)	X	A,B,C,D	7
OWS 800F	800F	4B	800	1984	1,500/ Concrete	Active	From RFA: SWMU 232- NFA.	No further action recommended in the RFA based on soil sample results.	S		Oil/water	No	X	A,B,D	7
OWS 802	802	4B	802	Unknown	1,000/ Concrete	Active	From LCR: OWS appears sound, needs cleaning. This OWS scheduled for maintenance/cleaning as of 2/94 according to El Toro staff.	Cleaning the OWS recommended in the LCR	LC		Oil/water	No		C,D,F	7
OWS 817	817	3F	817	Unknown	1,500/ Concrete	Active	From RFA: SWMU 233- NFA. From LCR: OWS does not appear to be used; appears sound. OWS scheduled for maintenance/repairs according to El Toro staff.	No further action recommended in RFA based on soil sample results. Cleaning the OWS recommended in the LCR.	S		Oil/water	No	X	B,C,D,F	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
 (Sheet 10 of 11)

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 845	845	5A	846	Unknown	2,000/ Steel	Inactive	From RFA: SWMU 248-NFA. From LCR: OWS not in use; bolted ports not accessible; steam cleaner not functional; structural condition unknown. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	No	X	C,F	7
OWS 850	850	5A	850	Unknown	Unknown/ Unknown	Active	From LCR: OWS located south of burn pits; bolt ports not accessible; UST believed to be associated with and adjacent to OWS. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.	Additional investigations recommended in the LCR since little information about OWS is available.	LC		Oil/water	Unknown		C,F	7
OWS 892	892	5A	892	Unknown	1,375/ Concrete	Active	From LCR: OWS appears sound; produces approx. 5-20 gpm; in use 4 days/week. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	No		C,F	7
OWS 896	896	5A	896	1982	600/ Steel	Active	From LCR: OWS ports bolted; appears sound; may have been built in 1982; 150-gal fiberglass UST located west of OWS. UST and piping double-walled. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	Unknown		C,F	7

**Table 3-14**  
**Oil/Water Separator Inventory**  
(Sheet 11 of 11)

Database Tracking	OWS Number	Parcel	Location/ Nearest Building Number	Year Installed	Capacity (gal)/ Tank Material	Status	Comments	Further Action	Location Status <sup>1</sup>	Closure/ Removal/ Abandon. Date	Contents	UST Associated with OWS	RFA Sampling (X)	Document Source <sup>2</sup>	ECP Area Type
OWS 897	897	5A	897	Unknown	Unknown/ Steel	Active	From LCR: Waste oil level alarm light on - facility personnel reported problems with level sensor switch. Rain diversion valves & controls scheduled to be installed at this OWS according to El Toro staff.		LC		Oil/water	No		C,F	7
OWS 1702	1702	1B	1702	Unknown	550/ Steel	Active	From LCR: No access to OWS ports; OWS appears sound, adjacent UST and its piping has secondary containment. OWS scheduled for general maintenance/cleaning according to El Toro staff.		LC		Oil/water	Unknown		C,F	7

Notes: <sup>1</sup> The following codes describe the location of OWSs:

LC - Location confirmed.

S - OWS location identified on historical as-built plan. Location to be confirmed by field survey.

SB - Location of building confirmed. OWS location to be determined by field survey.

<sup>2</sup> The letters in this column correspond to the following sources of information:

A - MCAS El Toro, 1993. Management Overview of Storage Tanks.

B - EG&G Idaho, Inc., 1990. Draft USMC MCAS El Toro Underground Storage Tank Survey Report.

C - Law/Crandall, Inc., 1993. Oil/Water Separator Survey, El Toro Marine Corps Air Station.

CE - Device under Conditional Exemption for Specified Wastestreams per a letter from DTSC dated 1/10/94.

D - Jacobs Engineering Group, 1993. MCAS El Toro Final RCRA Facility Assessment Report.

E - Letter from the Department of Toxic Substance Control (DTSC) to MCAS El Toro on Acknowledgment of Units Operating Under Conditional Authorization and/or Conditional Exemption.

F - Personal communications with El Toro Staff in February 1994.

G - Personal communications with El Toro Staff in January 1996.

Abbreviations: ECP - environmental condition of property  
FA - further action  
gal - gallon(s)  
LCR - Law/Crandall Report  
NFA - no further action  
NPDES - National Pollution Discharge Elimination System

OWS - oil/water separator  
RFA - RCRA Facility Assessment  
RWQCB - Regional Water Quality Control Board  
SWMU - Solid Waste Management Unit  
UST - underground storage tank

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**Table 3-15**  
**Vegetative Cover and Other Features Within Natural Area**  
**(Sheet 1 of 1)**

<b>Vegetative Cover Type/Feature</b>	<b>Acres</b>
Venturan-Diegan transitional coastal sage scrub	118.1
California sagebrush-California buckwheat scrub	42.6
Black sage scrub	2.4
Sagebrush scrub	163.5
Sagebrush-black sage scrub	40.0
Bush mallow sage scrub	10.4
Southern cactus scrub	23.2
Sage scrub-grassland ecotone	43.3
Annual grassland	208.3
Southern coastal needlegrass grassland	87.2
Ruderal	37.9
Freshwater swale	1.0
Southern willow scrub	30.6
Mulefat scrub	5.3
Southern sycamore riparian woodland	0.6
Coast live oak woodland	0.9
Mexican elderberry woodland	2.4
Open water	2.2
Ephemeral drainages and washes	0.4
Vineyards and orchards	44.8
Urban	107.4
Nonurban commercial/industrial/institutional	3.3
Parks and ornamental plantings	4.7
Other developed areas	1.8
Cleared or graded	228.9
<b>Total Acreage of Natural Area</b>	<b>1211.2</b>

Source: D&M 1994

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**Table 3-16**  
**Special-Status Wildlife Species at MCAS El Toro**  
**(Sheet 1 of 1)**

Species	Status
<b>Amphibians/Reptiles</b>	
Coastal Western Whiptail	Federal Category 2 Candidate
Orange-Throated Whiptail	Federal Category 2 Candidate California Species of Special Concern
San Diego Coast Horned Lizard	Federal Category 2 Candidate California Species of Special Concern
Western Spadefoot Toad	California Species of Special Concern
<b>Birds</b>	
Bell's Sage Sparrow	Federal Category 2 Candidate California Species of Special Concern
Black-Shouldered Kite	California Fully Protected
California Gnatcatcher	Federal Category 2 Candidate California Species of Special Concern
Cooper's Hawk	California Species of Special Concern
Ferruginous Hawk	Federal Category 2 Candidate California Species of Special Concern
Loggerhead Shrike	Federal Category 2 Candidate California Species of Special Concern
Osprey	California Species of Special Concern
Prairie Falcon	California Species of Special Concern
San Diego Cactus Wren	Federal Category 2 Candidate California Species of Special Concern
Sharp-Shinned Hawk	California Species of Special Concern
Southern California Rufous-Crowned Sparrow	Federal Category 2 Candidate California Species of Special Concern
<b>Mammals</b>	
Northwestern San Diego Pocket Mouse	Federal Category 2 Candidate California Species of Special Concern
San Diego Black-Tailed Jackrabbit	Federal Category 2 Candidate California Species of Special Concern
San Diego Desert Woodrat	Federal Category 2 Candidate California Species of Special Concern
Southern Grasshopper Mouse	Federal Category 2 Candidate California Species of Special Concern

Source: D&amp;M1994

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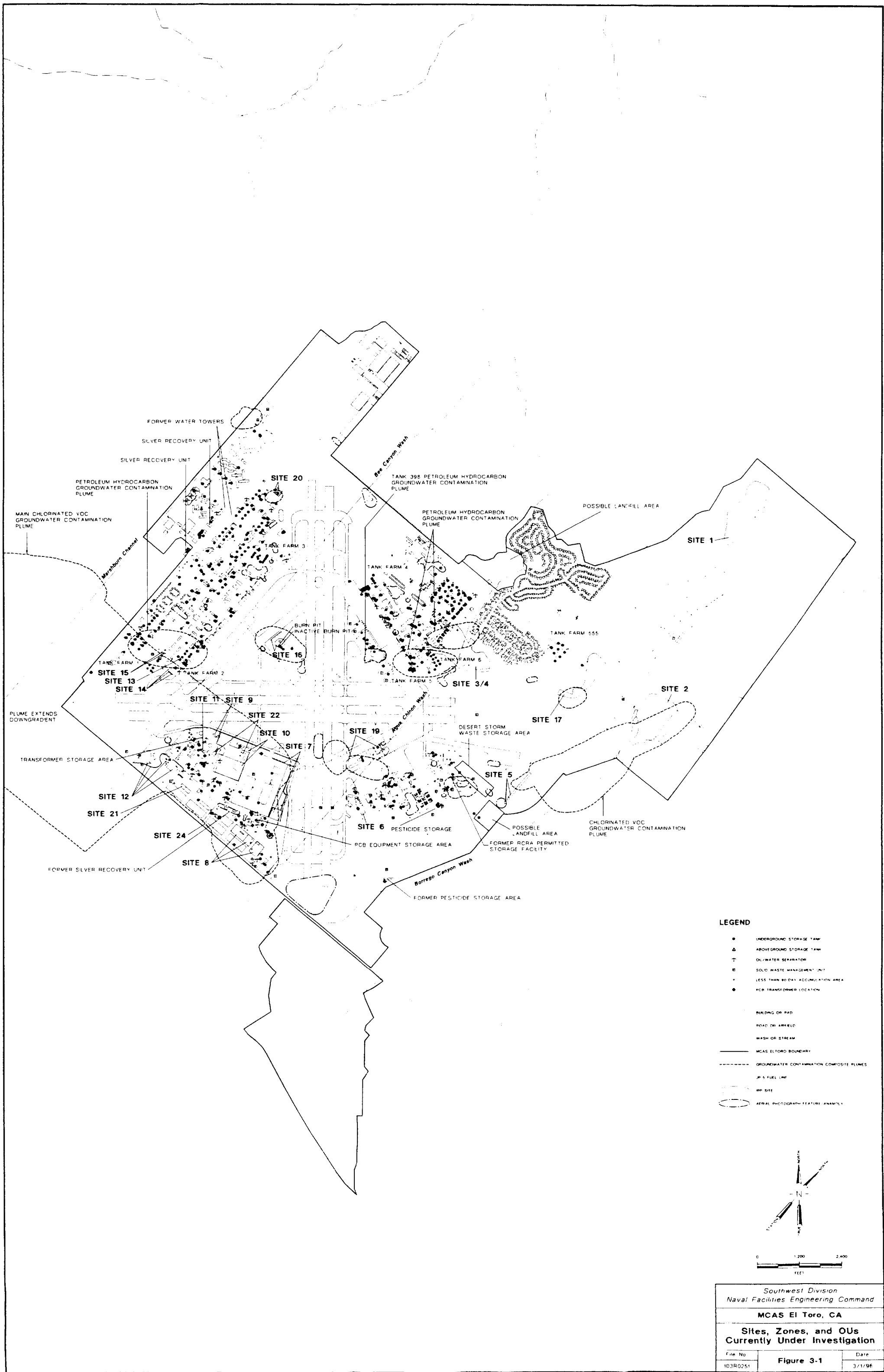
**Table 3-17**  
**Summary of Land Area by ECP Area Type**  
**(Sheet 1 of 1)**

ECP Area Type	STATION PROPERTY		Area Type Definition
	Acreage	Percent	
1	2,982	63	Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
2	5	<< 1	Areas where only storage of hazardous substances or petroleum products has occurred (but no release, disposal, or migration from adjacent areas has occurred).
3	5	<< 1	Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action.
4	0	0	Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken.
5	0	0	Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, removal and/or remedial actions are underway, but all required remedial actions have not yet been taken.
6	1,084	23	Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been implemented.
7	662	14	Areas that are unevaluated or require additional evaluation.
<b>Totals</b>	<b>4,738</b>	<b>100</b>	

Source: Jacobs 1994. MCAS El Toro Environmental Baseline Study.

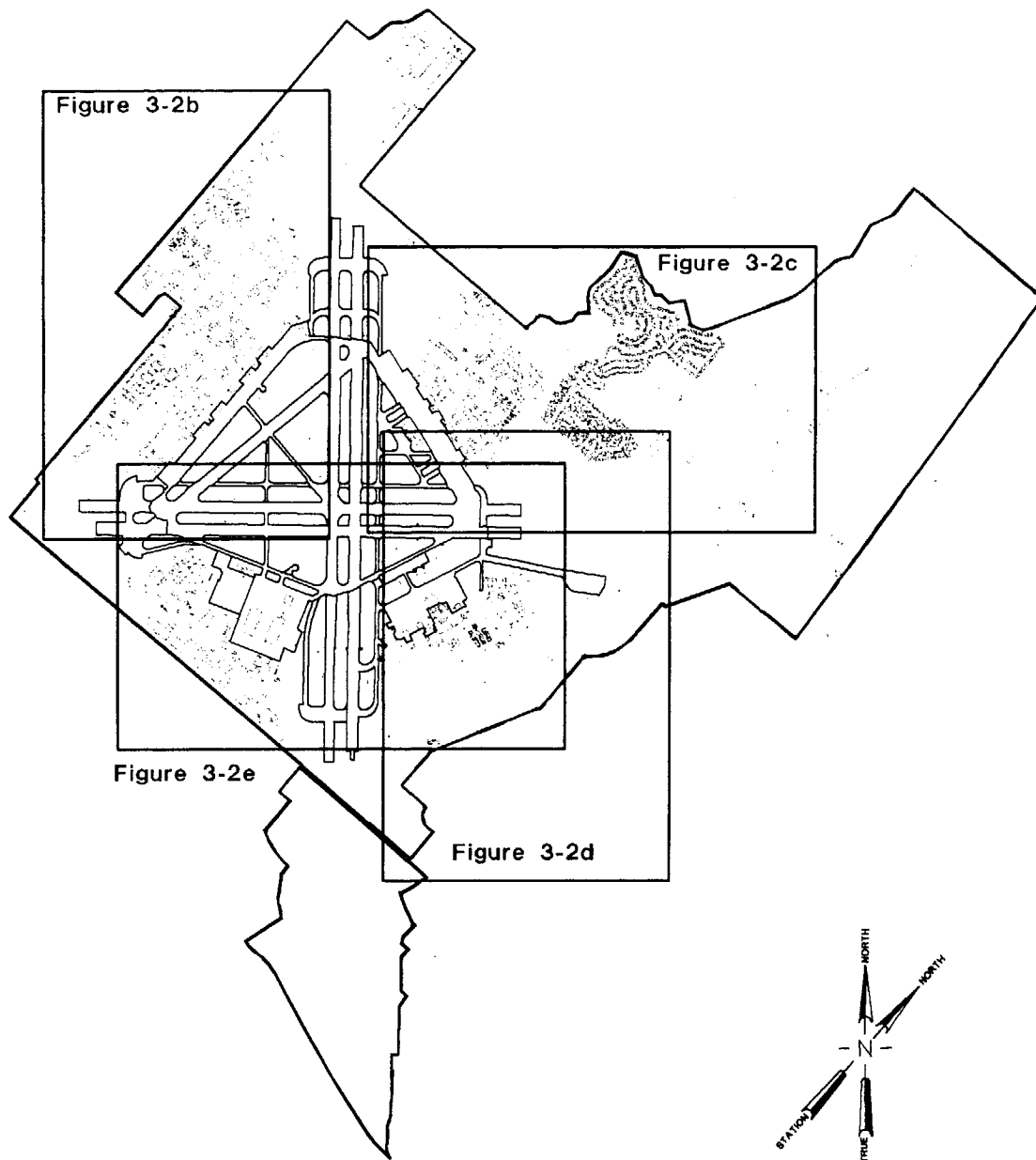
Abbreviations: ECP – environmental condition of property

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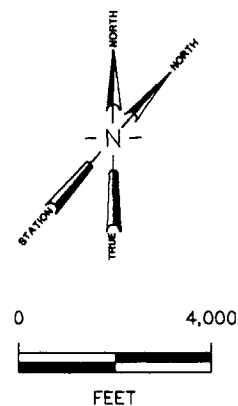
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# **LEGEND**

—— MCAS EL TORO BOUNDARY



Southwest Division Naval Facilities Engineering Command		
MCAS El Toro, CA		
Key to UST Location Map		
File No.	Figure 3-2a	Date
103K0250		3/1/96

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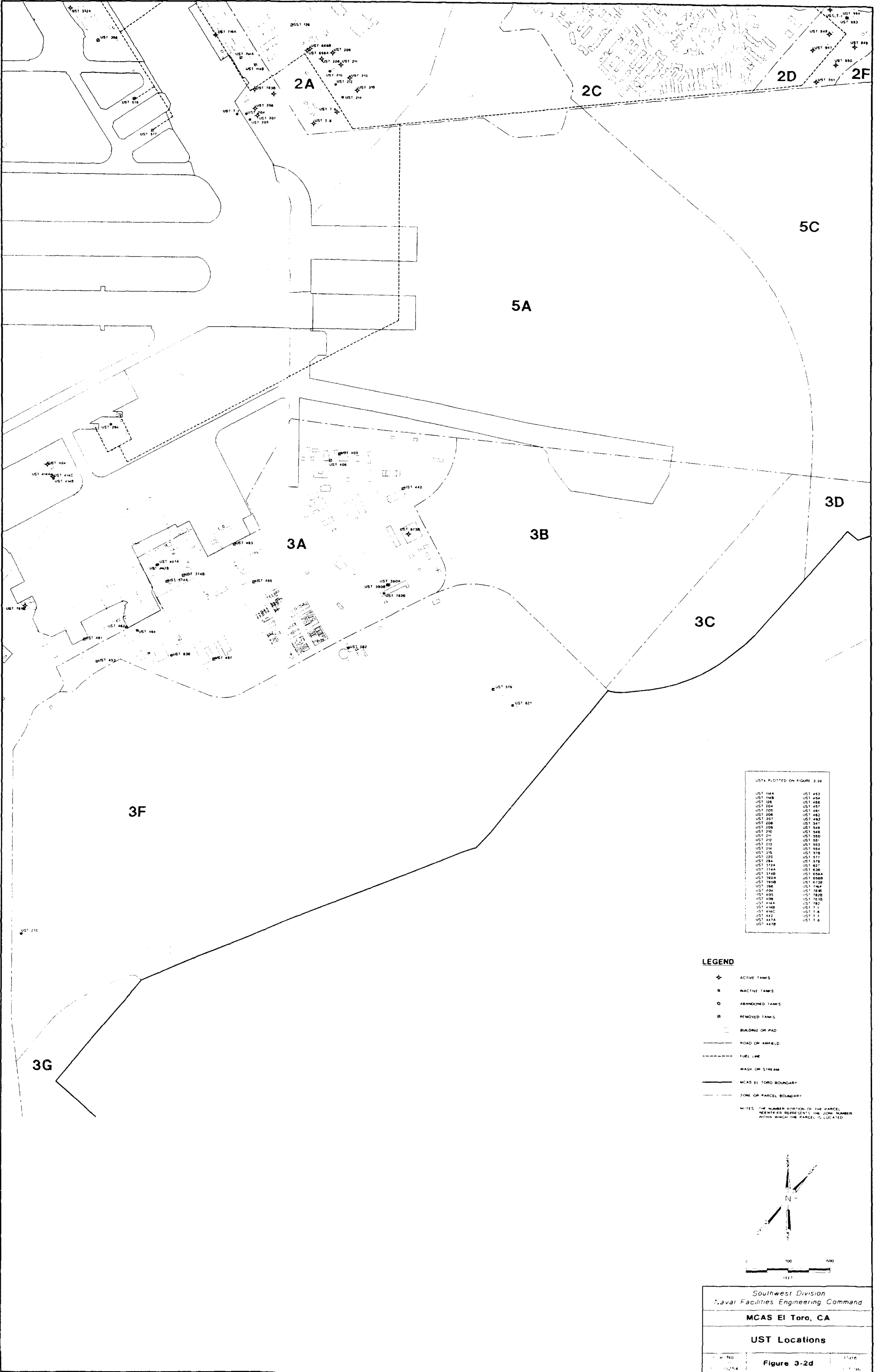
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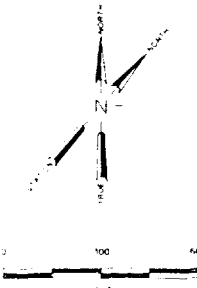
USTs PLOTTED ON FIGURE 3-2d

UST 148A	UST 453
UST 148B	UST 454
UST 126	UST 466
UST 204	UST 457
UST 205	UST 461
UST 206	UST 462
UST 207	UST 463
UST 208	UST 547
UST 209	UST 548
UST 210	UST 549
UST 211	UST 550
UST 212	UST 551
UST 213	UST 553
UST 214	UST 554
UST 215	UST 578
UST 222	UST 577
UST 284	UST 579
UST 372A	UST 627
UST 374A	UST 636
UST 374B	UST 656A
UST 380A	UST 656B
UST 380B	UST 673B
UST 380C	UST 673C
UST 380D	UST 673D
UST 380E	UST 673E
UST 404	UST 784E
UST 405	UST 782B
UST 406	UST 782C
UST 414A	UST 782
UST 414B	UST 782
UST 414C	UST 782
UST 442	UST 782
UST 447A	UST 782
UST 447B	UST 782

LEGEND

- ACTIVE TANKS
- INACTIVE TANKS
- ABANDONED TANKS
- REMOVED TANKS
- BUILDING OR PAD
- ROAD OR AIRFIELD
- FUEL LINE
- WASH OR STREAM
- MCAS EL TORO BOUNDARY
- ZONE OR PARCEL BOUNDARY

NOTES: THE NUMBER PORTION OF THE PARCEL IDENTIFIER REPRESENTS THE ZONE NUMBER WITHIN WHICH THE PARCEL IS LOCATED.



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USTs PLOTTED ON FIGURE 3-26

UST 100	UST 300	UST 300A	UST 400
UST 101	UST 301	UST 301A	UST 401
UST 102	UST 302	UST 302A	UST 402
UST 103	UST 303	UST 303A	UST 403
UST 104	UST 304	UST 304A	UST 404
UST 105	UST 305	UST 305A	UST 405
UST 106	UST 306	UST 306A	UST 406
UST 107	UST 307	UST 307A	UST 407
UST 108	UST 308	UST 308A	UST 408
UST 109	UST 309	UST 309A	UST 409
UST 110	UST 310	UST 310A	UST 410
UST 111	UST 311	UST 311A	UST 411
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UST 119	UST 319	UST 319A	UST 419
UST 120	UST 320	UST 320A	UST 420
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UST 122	UST 322	UST 322A	UST 422
UST 123	UST 323	UST 323A	UST 423
UST 124	UST 324	UST 324A	UST 424
UST 125	UST 325	UST 325A	UST 425
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UST 137	UST 337	UST 337A	UST 437
UST 138	UST 338	UST 338A	UST 438
UST 139	UST 339	UST 339A	UST 439
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UST 141	UST 341	UST 341A	UST 441
UST 142	UST 342	UST 342A	UST 442
UST 143	UST 343	UST 343A	UST 443
UST 144	UST 344	UST 344A	UST 444
UST 145	UST 345	UST 345A	UST 445
UST 146	UST 346	UST 346A	UST 446
UST 147	UST 347	UST 347A	UST 447
UST 148	UST 348	UST 348A	UST 448
UST 149	UST 349	UST 349A	UST 449
UST 150	UST 350	UST 350A	UST 450

**LEGEND**

- ◆ ACTIVE TANKS
- INACTIVE TANKS
- ABANDONED TANKS
- REMOVED TANKS
- CLOSED TANKS
- ▭ BUILDING OR PAD
- ROAD OR AIRFIELD
- FUEL LINE
- WASH OR STREAM
- MCAS EL TORO BOUNDARY
- ZONE OR PARCEL BOUNDARY

NOTES: THE NUMBER PORTION OF THE PARCEL IDENTIFIER REPRESENTS THE ZONE NUMBER WITHIN WHICH THE PARCEL IS LOCATED

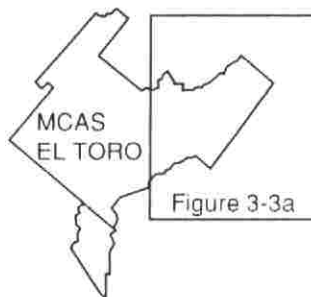


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MCAS El Toro, CA		
UST Locations		
File No. 103UG255	Figure 3-2e	Date 3/1/96

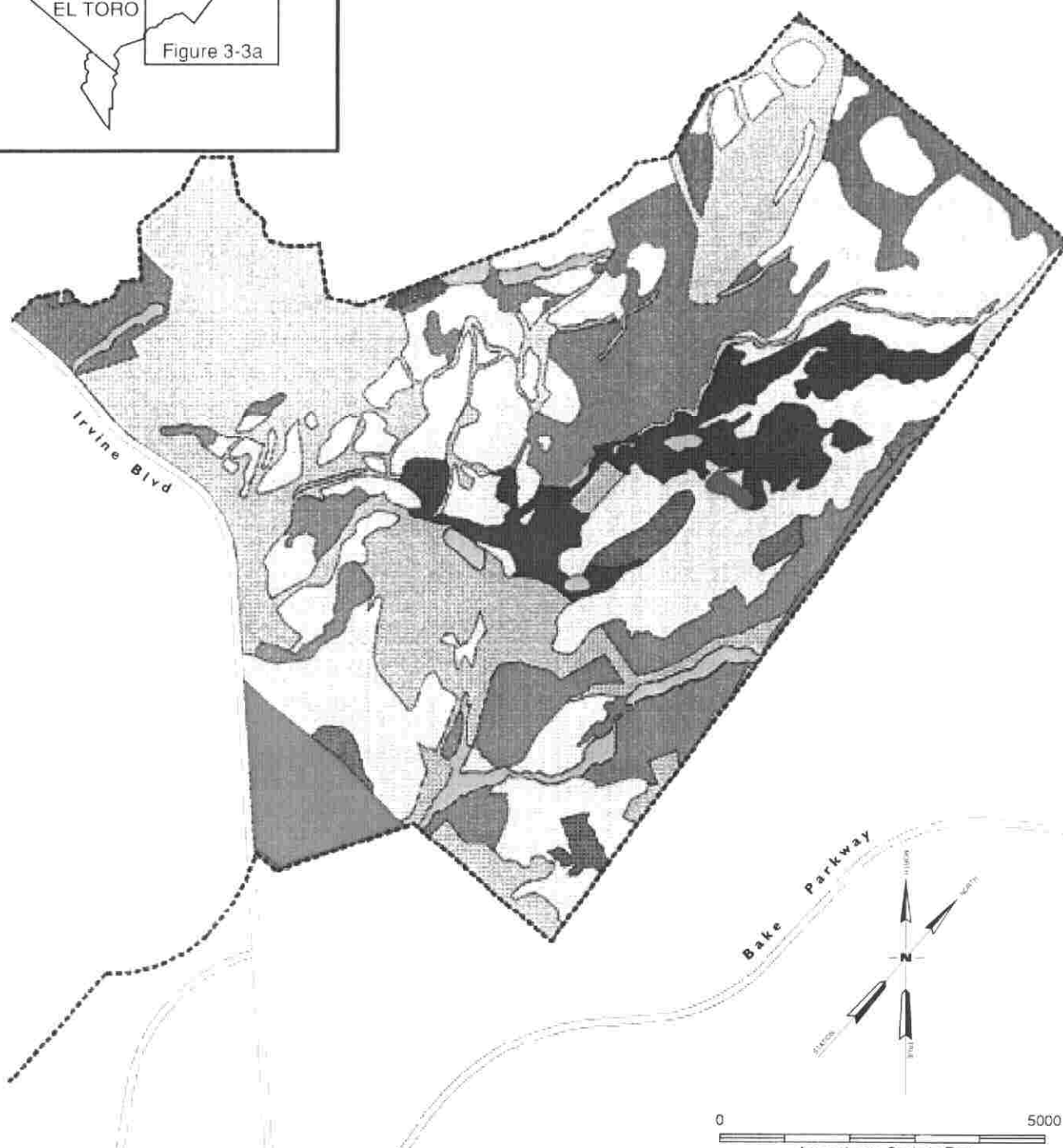
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Bee Canyon Access



# LEGEND

- Coastal Sage Scrub
- Southern Cactus Scrub
- Riparian Scrub
- Annual Grassland
- Native Grassland
- Mexican Elderberry Woodland
- Agriculture/Orchards
- Developed/Disturbed Areas
- Open Water
- Station Boundary

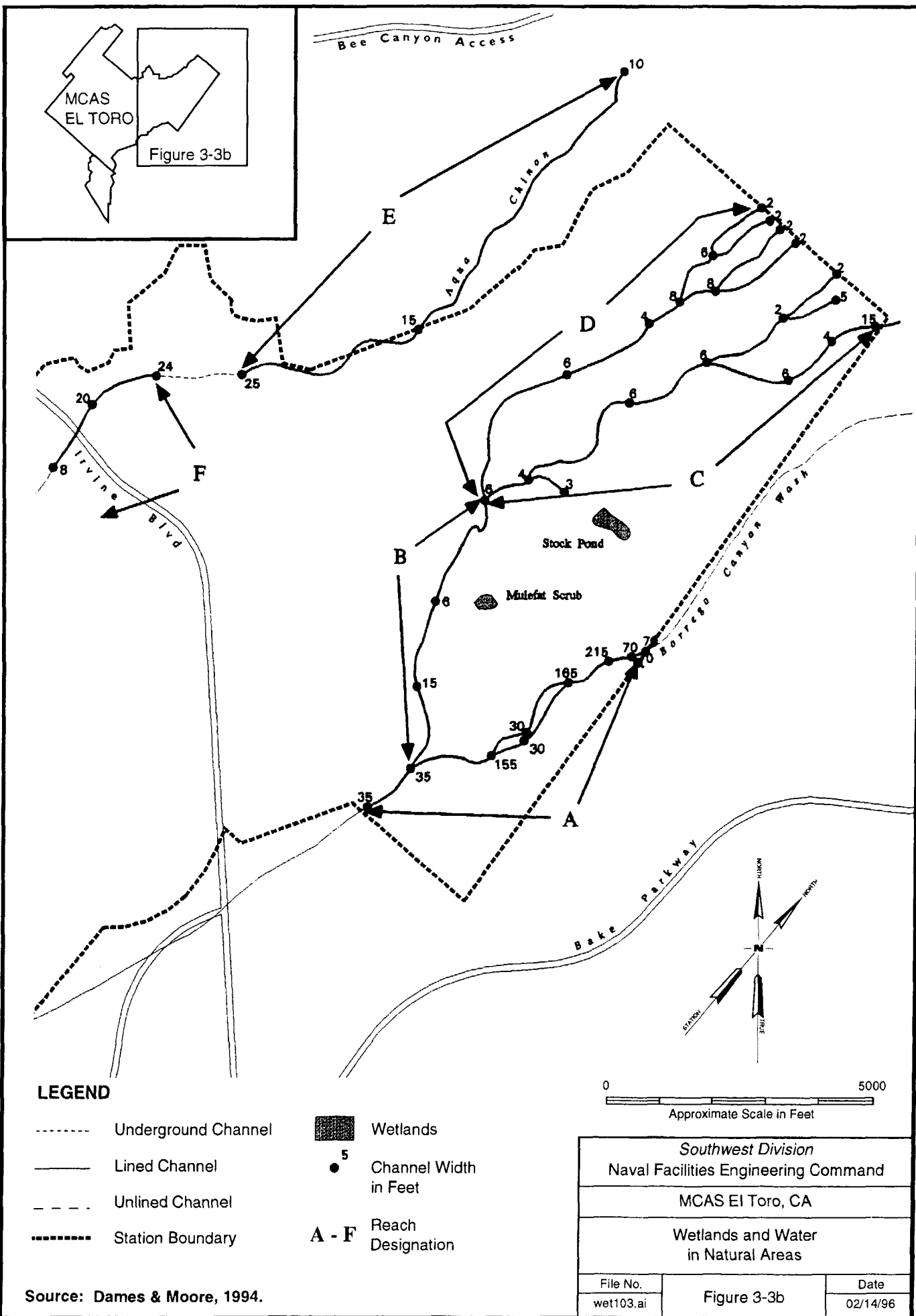
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Approximate Scale in Feet

Southwest Division		
Naval Facilities Engineering Command		
MCAS El Toro, CA		
Vegetation Communities in Natural Area		
File No.	Figure 3-3a	Date
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Source: Dames and Moore, 1994.

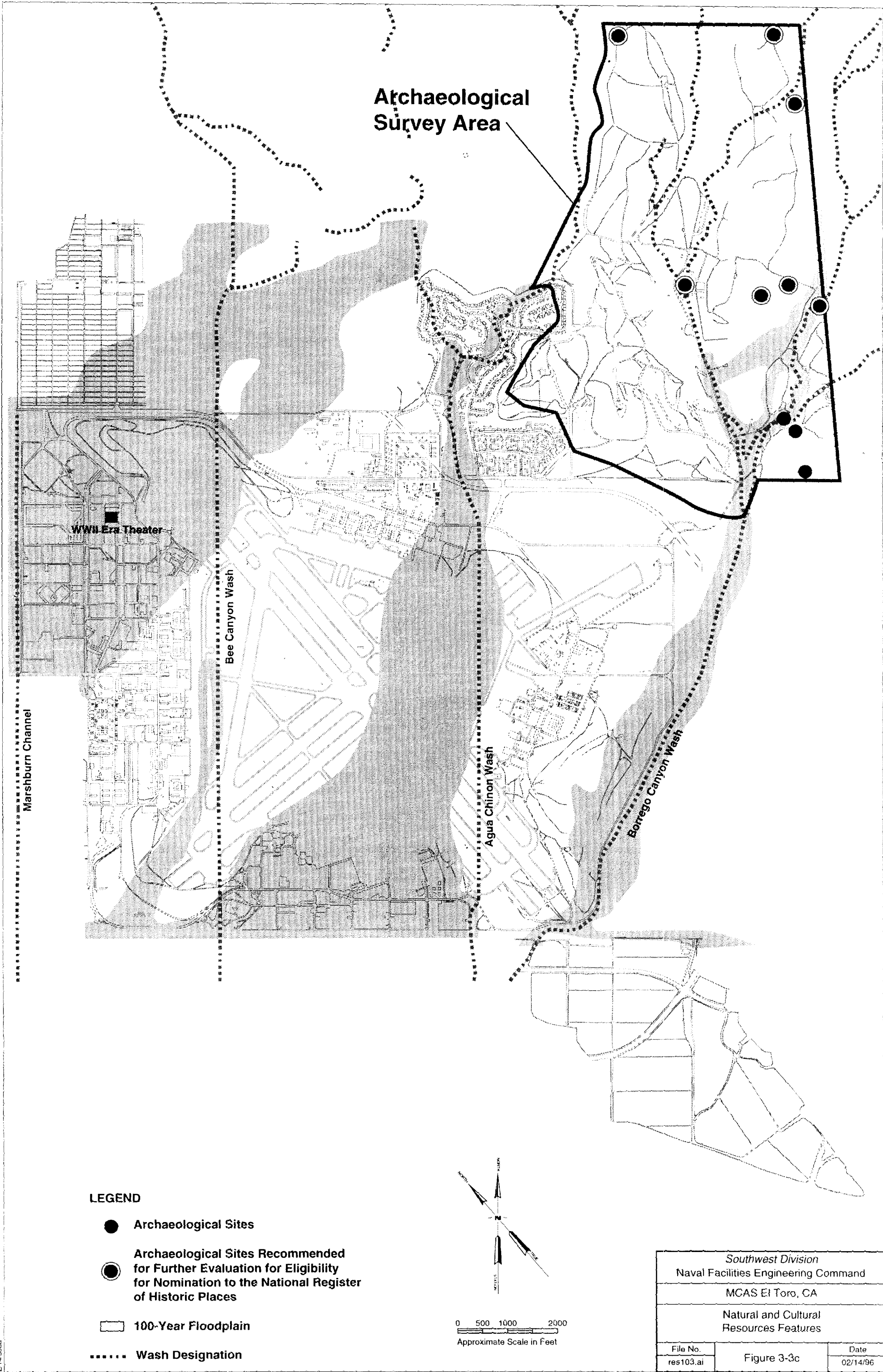
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2/14/96da

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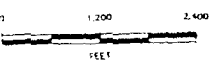
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**LEGEND**

- AREA TYPE 1
- AREA TYPE 2
- AREA TYPE 3
- AREA TYPE 4
- AREA TYPE 5
- AREA TYPE 6
- AREA TYPE 7
- BUILDING OR PAD
- ROAD OR AIRFIELD
- WASH OR STREAM
- MCAS EL TORO BOUNDARY



## Chapter 4

# Installationwide Strategy For Environmental Restoration

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This chapter summarizes the strategies for environmental restoration and compliance programs at MCAS El Toro based on currently available information. Closure of the Station is scheduled for July 1999 and, therefore, environmental restoration and compliance strategies will shift from supporting an active component mission to preparing for disposal and reuse of MCAS El Toro property.

The Station has been divided into five zones based on geographic considerations, mission activities, and parcel disposal considerations. All LOCs including IRP sites are located within zones 1 through 5. Zone designations are used to create geographically contiguous real property areas that provide amenable management of investigative units.

The IRP sites are grouped into three OU categories based on types of contamination and possible remedial investigation activities. Therefore, zone designations do not necessarily correlate to OU designations.

Current schedule of activities for OUs are as follows.

- An FS was completed for OU-1 and a draft ROD is scheduled for completion by 30 May 1996.
- OU-2A, OU-2B, and OU-2C are in the Phase II RI process. Draft Phase II RI reports are scheduled for completion by 20 February, 19 March, and 19 April 1996, respectively.
- Draft final EE/CAs were submitted for public review for all or portions of seven OU-3 sites in October 1995. The remaining OU-3 sites are being addressed in additional EE/CAs, through withdrawal from the IRP via the CERCLA petroleum exclusion, and in Phase II RI reports, which are scheduled for completion by 20 November 1996.

Early action strategies have been planned for several IRP sites. The early action strategies are addressed in EE/CAs. Once the early actions have been implemented, the BCT anticipates that the sites will be brought to closure under an NFI decision.

Strategies for compliance programs and natural and cultural resources for MCAS El Toro are also summarized in Chapter 4. Compliance programs addressed in this chapter include: storage tanks, hazardous materials and waste management, solid waste management, polychlorinated biphenyls, asbestos, radon, RCRA facilities, NPDES permits, RECLAIM permits, OWS, silver recovery units, and lead-based paints. Natural and cultural resources include threatened and endangered species, wetlands, surface waters, floodplains, archaeological resources, historic structures, and paleontological resources.

In an effort to carry out strategies for environmental restoration activities while assuring proactive community involvement, the Station has adopted an approach to meet the needs of the public as well as to meet the requirements of NEPA, CERCLA, CERFA, and the California Health and Safety Code Section 25356.1. The approach provides for a number of services to inform the community of environmental restoration activities while maintaining a commitment to efficient and cost-effective cleanup at MCAS El Toro.



## 4.1 ZONE/OPERABLE UNIT DESIGNATION AND STRATEGY

The following sections discuss zones identified for the BCP and existing IRP OUs and sites. According to the BCP guidance, zones may be identified to create geographically contiguous areas that are amenable to management as single investigative units. The zones for MCAS El Toro have been created by the BCT and Project Team based on geographic considerations, mission activities, and parcel disposal considerations. Current IRP OUs have been defined primarily by the type of IRP sites (such as potential source areas for the VOC contamination in groundwater) rather than by geographic locations. The current zone designations, therefore, do not have a significant correlation with the IRP OUs. However, BCP zones have been defined to reduce or eliminate splitting of individual IRP sites.

### 4.1.1 Zone Designations

For the purposes of this BCP, MCAS El Toro was divided into five geographically contiguous zones. Each of the five zones was subdivided into parcels with a varying number of parcels per zone. These parcels correspond to the possible reuse parcels (based on existing land use) as discussed in Section 2.1. In the absence of a reuse plan, parcelization was based on current land use at MCAS El Toro. Zone and parcel divisions for the Station are shown in Figure 2-1. A description of each zone is provided below.

- Zone 1 consists of the northwest quadrant of the Station and contains administrative services, the Station headquarters, family and bachelor housing, and community support services. IRP Sites 13, 14, 15, and 20 are located in Zone 1.
- Zone 2 consists of the northeast quadrant of the Station. Zone 2 houses activities of the Marine Aircraft Group (including training, maintenance, supply and storage, and airfield operations), additional family housing and community services, as well as an open area surrounding and including the EOD range. IRP Sites 1, 3, and 4 are located in Zone 2. This zone also contains approximately 90 percent of the natural habitat remaining at the Station.
- Zone 3 comprises the southeast section of the Station where additional administrative and maintenance services are located. The Station Golf Course is also located in this zone. IRP Site 5 is located in Zone 3.
- Zone 4 is the southwest area of the Station. This zone primarily houses maintenance, supply, storage services, and small portions of the southern flight corridor. IRP Sites 8, 11, 12, 21, and portions of 24 are located in Zone 4.
- Zone 5 incorporates all areas necessary to maintain airfield operations. This includes active runways and taxiways, the entire aircraft parking apron, and all takeoff and approach flight corridors. IRP Sites 2, 6, 7, 9, 10, 16, 17, 19, 22, and portions of 24 are located within Zone 5.

Parcels within each zone were delineated according to current land use at the Station. Also, the boundaries for each parcel were drawn such that division of IRP sites

between parcels was minimized. Site 24 (Possible VOC Source Area) encompasses most of the southwest quadrant of the Station and, therefore, was divided between parcels 4A, 4B, and 5A. Site 25 (Major Drainages) consists of the four drainage channels that traverse or border the Station and, therefore, was divided between numerous parcels. In addition, parcel boundaries were established so as to minimize the division of LOCs. LOCs are defined as locations of environmental concern (e.g., IRP sites, USTs, RFA SWMUs/AOCs).

#### **4.1.2 Operable Unit Designations**

The zones and parcels identified in Section 4.1.1 do not correspond to the OUs established for the IRP sites. The relationship between IRP sites, OUs, and parcels is shown in Table 4-1a (Relationship Between IRP Sites, OUs, and Parcels). The OUs for the station are defined in Chapter 3.

As new data become available, the OU definitions may be reevaluated and refined to better suit restoration strategies that expedite base reuse and disposal. The OU definitions can be modified at any time by agreement among the parties to the FFA.

#### **4.1.3 Sequence of Operable Units**

The schedules for OU-1, OU-2A, OU-2B, OU-2C, and OU-3 at MCAS El Toro were revised in January 1995. The current schedules for the OUs are also discussed in Chapters 3 and 5. The current OU sequencing is as follows.

1. OU-1 will be the first OU to come to a ROD. Currently, the FS is being prepared for OU-1. The draft ROD is scheduled to be completed on 30 May 1996. Remediation of the VOC-contaminated groundwater will continue beyond closure of the Station, which is scheduled for July 1999.
2. OU-2A, OU-2B, and OU-2C were further investigated in a Phase II RI that began in mid-1995. The draft Phase II RI report for OU-2A was completed on 20 February 1996. Draft Phase II RI reports for OU-2B and OU-2C are scheduled for completion by 19 March and 19 April 1996, respectively. Draft RODs for OU-2A, OU-2B, and OU-2C are scheduled to be completed by 22 January, 19 February, and 17 March 1997, respectively.
3. All or portions of OU-3, Sites 4, 7, 11, 13, 14, 19, and 20, will be addressed with early actions and will not be included in the Phase II RI process. Draft final EE/CAs for these sites were completed and submitted for public review in October 1995. It is anticipated that removal actions will be completed by mid-1997. Three additional early action reports for four units of Sites 7, 8, and 12 will be submitted in March 1997. The remaining portions of OU-3 Sites 1, 6, 7, 8, 9, 10, 12, 14, 15, 16, 19, 20, 21, and 22 will be investigated in the Phase II RI scheduled for mid-1996.

As additional information on OU sequencing becomes available, Table 4-1b (Cleanup Sequence) will be updated.

#### **4.1.4 Early Actions Strategy**

A list of planned early actions related to the IRP at MCAS El Toro is presented in Table 4-2 (Environmental Restoration Planned Early Action). The table presents the site number, the parcel in which the site is located, and a description of the action and unit involved in the early action. The early actions are prioritized from highest (A) to lowest (C), with the action at A priority sites planned for implementation in 1995. The implementation dates for sites with B and C priorities have not yet been determined.

Several new early action strategies for IRP sites have been developed. To expedite the cleanup process at several IRP sites where the nature and extent of contamination appears to be 1) fairly well characterized by Phase I RI data, and 2) amenable to a removal action, early actions are planned. These early actions will be addressed with EE/CAs, which, after implementation of the removal actions, are anticipated to bring sites to the no further investigation (NFI) stage. This approach has been taken at one or more units at Sites 4, 7, 11, 13, 14, 19, 20, and 25. Three additional early actions are planned for portions of Sites 7, 8, and 12.

#### **4.1.5 Remedy Selection Approach**

Remedies will be selected in accordance with statutory and NCP criteria. The MCAS El Toro Project Team will involve all parties who have an impact on the remedies selected at the Station in the remedy-selection process. During the evaluation of alternatives, particular attention will be given to the following issues:

- applicable or relevant and appropriate requirements (ARARs);
- land use/risk assessment;
- basewide treatment facilities;
- applicable remedies;
- petroleum, oils, and lubricants (POLs);
- future land use;
- reduction of risk for human and ecological receptors;
- cost-effectiveness; and
- use of presumptive remedies as applicable.

In addition, during the remedy selection process, the Project Team will consult the following documents prepared by the California Base Closure Environmental Committee (CBCEC).

- Innovative/Emerging Treatment Technologies. Draft. February 1994.
- Treatment Technologies Applications Matrix for Base Closure Activities. November 1993.

#### **4.1.6 Installationwide Source Discovery and Assessment Strategy**

Additional locations of potential environmental concern at MCAS El Toro have been identified in the final EBS report. These locations include the features identified from aerial photographs and interviews with current and past Station employees. The locations identified need to be further evaluated to determine if they present an environmental concern that would affect property transfer. Revisions of the BCP will track the status and strategies for evaluating and taking action at these newly identified locations of potential environmental concern, as appropriate.

### **4.2 COMPLIANCE STRATEGY**

This section presents a discussion of strategies for compliance programs at the Station. Table 4-3 (Environmental Compliance Planned Early Actions) presents a list of potential early actions related to compliance programs. The LOCs for early action include USTs, OWSs, and some SWMUs/AOCs and TAAs that were recommended for further action in the RFA performed at the Station.

#### **4.2.1 Storage Tanks**

##### **4.2.1.1 Underground Storage Tanks**

A total of 409 USTs have been identified at the Station. This total includes 66 active tanks, 146 inactive tanks, 154 removed tanks, 41 closed tanks, and 2 abandoned tanks. The UST Tiger Team has continued to meet regularly to assure compliance and removal of nonessential USTs. During 1995, a total of 41 USTs were removed, and by early 1996, 41 UST sites were closed by OCHCA or RWQCB. The Tiger Team has developed strategies to remove a total of 108 active and inactive USTs between 1996 and 1997. Thirty-five USTs are scheduled for removal in 1996, 58 additional USTs are scheduled for removal in 1996 or 1997, and 15 USTs will be removed in 1997. Furthermore, the Tiger Team is developing a scope of work for necessary remedial actions at various former UST sites.

Of the 154 removed tank locations, 6 are recommended for immediate closure, 2 locations are recommended for further investigation and/or remedial actions, and 8 UST locations were considered closed during the Irvine Boulevard Relocation project in 1990. The status of the remaining 138 USTs is pending.

For the purpose of generating conservative cost estimates for base closure, it is assumed that all of the USTs will eventually need to be removed from the Station for the following reasons.

- Some reuse scenarios (with the exception of reuse as an airport) might not require the USTs.
- If USTs are needed in the future under a reuse scenario for the property, new double-walled USTs would eventually need to be installed by the reuse agency.

Prior to base closure and eventual removal of all USTs, various USTs that are essential to Station operations will need to remain active and, therefore, will need to be monitored according to requirements of OCHCA.

### ***Interim Strategy for UST Management***

**Active USTs.** All currently active USTs are assumed to be essential to base operations, and as such, are assumed to remain active until July 1999.

- Prior to 1999, these USTs will need to be properly monitored per the requirements of OCHCA. Nonintrusive testing may also be conducted at active USTs to assess the possibility of a release at these USTs. Testing, such as soil gas surveys and/or tank integrity tests, may be considered for these USTs. The Tiger Team will provide recommendations for compliance monitoring and any nonintrusive testing that may be done at USTs planned for continued use until 1999.
- After 1999, the active USTs will need to be removed.

**Inactive USTs.** All inactive USTs, including those previously abandoned in place and filled with sand, will need to be removed prior to July 1999.

### ***Assumptions on UST Leakage***

Until all of the USTs are actually removed, the Station will not know how many USTs have leaked, and how many USTs will require remedial action for contamination cleanup.

Based on knowledge of similar facilities, it is anticipated that remediation will be required at a substantial number of USTs with past (or current) leakage from the tank and/or its associated piping. Since the actual percentage of leaking USTs and the actual extent of the leakage will not be known until after the removals have occurred, some initial assumptions have been made by the BCT.

**Percent of USTs With Leakage.** It is assumed that all USTs with a volume of 25,000 gallons or greater and approximately 50 percent of the remaining USTs will have leaked and contaminated the subsurface soil. These USTs will require some form of remedial action.

**Percent of USTs With Shallow and Deep Soil Contamination.** Of the USTs that have leaked, it is assumed that all USTs with a volume of 25,000 gallons or greater will have deep contamination. Of the remaining tanks assumed to have leaked (e.g., 50 percent of the USTs with a volume less than 25,000 gallons), it is expected that half will also have deep contamination and that half will have shallow contamination. UST sites with deep contaminated soils (i.e., greater than 20 feet deep) will require remediation. Shallow contaminated soils (i.e., less than 20 feet deep) may be remediated by excavation and off-site treatment/disposal.

**Remedial Action Assumed for USTs With Deep Contamination.** Of the USTs with deep contamination, it is assumed that soil vapor extraction (SVE) and *in situ* bioremediation will be used to clean up contaminated soil. It is assumed that these

USTs (30 percent of the total) will split to 15 percent SVE and 15 percent bioremediation.

**Percent of USTs With Potential Groundwater Contamination.** It is assumed that 5 percent of the USTs have leaked sufficient quantities of hydrocarbons to have impacted groundwater at the Station. For these, a groundwater remediation program is assumed to be required.

### ***Schedule Assumptions***

A closure date of July 1999 is targeted for the Station. Since significant remedial actions will be associated with the leaking USTs, the schedule for overall UST work at the Station must include significant time for both the removal of USTs and the remediation effort required for the leaking USTs.

**Inactive USTs.** There are 106 inactive USTs at the Station that are planned for removal. Of these, 33 USTs are scheduled for removal in 1996; 58 USTs are scheduled for removal in 1996 or 1997; and 15 USTs will be removed in 1997.

**Active USTs.** There are 66 active USTs at the Station. They are considered essential for base operations through the closure date of July 1999. The Tiger Team will continue monitoring these essential USTs while they are still active up to the closure date. To assess the possibility of a release from these USTs prior to July 1999, some nonintrusive testing (soil gas survey and/or tank integrity testing) may be performed.

### ***Prioritizing/Scheduling of USTs for Early Removal***

As in the past, UST removals at the Station will be performed in clusters. To perform the work in the most effective way, USTs will need to be prioritized to assess which ones should be removed early and which can wait until the scheduled closure of the Station. The Tiger Team will provide a plan prioritizing USTs for removal. Some of the factors to be considered in selecting USTs for early removal are listed below.

- USTs with evidence of a release should be given priority for early evaluation in the prioritization of work.
- USTs at the tank farms (i.e., large-capacity, old tanks [as much as 50 years old]) have a high likelihood of leakage, and should be given priority for early evaluation in the sequencing of the work. Since these are likely to be essential for Station operations and would not necessarily be candidates for early removal, early evaluation of these USTs for leakage by nonintrusive testing (soil gas survey and/or tank integrity tests) may need to be considered. Other large, old USTs should also be identified for potential early removal or evaluation.
- As a key part of the base closure, sequencing of USTs for removal must also be evaluated with respect to parcels that could potentially be transferred quickly by lease or deed.

#### **4.2.1.2 Aboveground Storage Tanks**

Eighteen ASTs have been identified at the Station, and all but four of the tanks are active. The Tiger Team will conduct an inventory of the ASTs and will assess the current and anticipated future need for these ASTs.

#### **4.2.1.3 Fuel Supply Pipelines**

An underground fuel supply pipeline system transfers fuel from large-capacity JP-5 USTs in Tank Farm 555 to various refueling points within the Station. These pipelines are considered essential to Station operations and are not planned for removal until after 1999. These pipelines will be subject to a "Tracer" integrity test in accordance with the 1996 UST regulations.

#### **4.2.2 Hazardous Materials/Waste Management**

The Station operated a RCRA-permitted storage facility at Building 673-T3 until August 1994. The Station submitted its Final Closure Certification Report for Building 673-T3 to DTSC on 15 November 1995.

Because the Station RCRA-permitted facility is closed, on-Station storage of hazardous waste is limited to less than 90 days. The paved and bermed less-than-90-day accumulation areas will be phased out as the current tenants begin to leave the Station. The EO accumulation area at Building 900, which receives hazardous waste containers from tenant accumulation areas, will remain operational until hazardous waste is no longer generated by the Station. Similarly, storage of waste oil at Building 326 and waste JP-5 at AST 862 will continue until these wastes are no longer generated by the Station.

Because spills may occur at the accumulation areas during day-to-day Station activities, any residual contamination at these accumulation areas will be addressed as part of base closure. On-site visual inspections of the active accumulation areas were performed in 1995.

From August to November 1991, various hazardous wastes generated overseas during Desert Storm were stored at an area located east of DRMO Storage Yard No. 3. The containers were stored atop plastic sheeting on unpaved ground. Although no releases at this area were reported, a visual inspection should be performed to survey the area for evidence of releases.

Pesticides are currently stored at Building 753. In the past, pesticides were stored at Buildings 493 and 687 and, prior to 1959, at the location currently occupied by Building 464. These locations should be visually inspected. These inspections will dictate whether further investigations are needed.

#### **4.2.3 Solid Waste Management**

Current solid waste management practices (i.e., off-site disposal of Station solid waste) will continue until final base closure. No landfills on the Station are currently active. Some consolidation of waste may occur in the future as part of base closure.

Remedial action for the existing landfills on-Station will be addressed in the IRP. Soil from IRP sites may be used as a landfill cover as part of closure.

#### **4.2.4 Polychlorinated Biphenyls**

Overall management of PCBs at the Station will be conducted in accordance with the MCAS El Toro PCB Management Plan (SAIC 1994). A description of specific issues pertaining to the current status of PCBs at the Station is provided below.

##### **4.2.4.1 PCB Transformers**

According to the U.S. EPA, the presence of operating PCB transformers does not necessarily preclude the transfer of Station property, and the presence of such transformers only affects property transfer if a release has occurred. In late 1994, a PCB transformer survey was performed at the Station. Of the 115 transformer locations identified at the Station, releases have been identified at only two locations.

- At Building 371 (transformer PCBT56), a possible dielectric fluid release was identified.
- At transformer PCBT74, a past release is known to have occurred, which was investigated during the RFA (SWMU/AOC 244). Further investigation will be performed at this location.

During the survey, the pole-mounted transformers could not be closely inspected; therefore, transformer identification numbers could not be verified. Additional inspections of these transformers using appropriate equipment (e.g., scissor-lift) should be conducted to obtain the serial numbers and verify that pole-mounted transformers at the Station do not contain PCBs.

##### **4.2.4.2 PCB Storage Areas**

Some PCB storage areas identified at the Station that have been or may need to be evaluated are discussed below.

- SWMU/AOC 7 (Transformer Storage Area) was reevaluated in the draft final addendum to the RFA and was recommended for transfer to the RAC contractor for limited surface soil cleanup of PCBs.
- Site 11 (Transformer Storage Area) is a PCB release site that is currently being evaluated in the IRP.
- A storage area adjacent to Tank 175 currently stores non-PCB-containing transformers. One PCB transformer was identified by Station personnel as having been stored in this area. No release of PCBs from this single transformer is believed to have occurred. A site inspection of this area may be performed to survey the area for evidence of releases.



- In 1993, a storage area for PCB equipment was identified at Building 324. This area was not inspected or evaluated as part of the RFA. At a minimum, this storage area may need to be inspected. The inspection will dictate whether further investigation is needed.

#### **4.2.4.3 Non-Transformer PCB Items**

Some buildings located at the Station have light fixtures with ballasts containing PCBs. The type of action recommended for buildings with PCB-containing light fixtures will depend on whether a building is planned for demolition. If a building with PCB fixtures is scheduled for demolished, proper demolition and disposal activities for the PCB-ballasts will need to be conducted. PCBs will be managed in place for buildings not planned for demolition. During transfer of buildings known to have PCB items, the Navy will disclose available information related to PCB items.

#### **4.2.5 Asbestos**

MCAS El Toro will continue to manage ACM according to DoD policy outlined in a letter dated 02 November 1994. Additional basewide asbestos surveys will not be conducted on the Station. Building-specific surveys for ACM may be conducted at buildings/facilities that are scheduled for demolition or other activities that may disturb any ACM.

Property containing ACM may be conveyed, leased, or otherwise disposed unless it is determined that the ACM is not in compliance with applicable laws, regulations, and standards, or if it poses a threat to human health at the time of transfer. If the ACM is not in compliance with applicable laws and regulations or poses a threat, the ACM will be remediated prior to property disposal. The above-mentioned remediation is not required in the following instances:

- the building is scheduled for demolition by the transferee;
- the transfer document prohibits occupation of the building prior to the demolition; or
- the transferee assumes responsibility for the management of any ACM in accordance with applicable laws.

#### **4.2.6 Radon**

A radon survey was conducted for the Station hospital, child-care center, and housing units in 1991. The results of the survey indicated that none of these facilities or housing units exceeded the radon threshold value of 4 pCi/L. Thus, no mitigative action or further testing is recommended for these areas of the Station. In addition, it is anticipated that the radon levels in other buildings at the Station should not be significantly different from those that were surveyed.

When MCAS El Toro property is transferred, it is DoD policy to include in the property transfer documents, any available and relevant radon assessment data. Therefore, the results of the radon survey at the Station should be included in future property transfer documents.

Radium paint has been used in the past in Building 296. Waste associated with radium paint use in this building may have been disposed in one of the Station landfills. The radon survey did not include Building 296.

#### **4.2.7 RCRA Facilities (SWMUs)**

Further action will be performed for various SWMUs/AOCs investigated in the RFA and the draft final addendum to the RFA. A summary of these SWMUs/AOCs planned for further action follows.

- Twenty-five SWMUs/AOCs were recommended for further action in the RFA:
  - Two SWMUs/AOCs (numbers 194 and 300) have been included in IRP Site 3 (Original Landfill) and will be further investigated in the Phase II RI for this site.
  - Five SWMUs/AOCs (numbers 39, 46, 88, 131, and 171) were recommended for additional field sampling in an extension of the RFA. This additional investigation was conducted by the CLEAN II contractor for inclusion in the draft final addendum to the RFA (BNI 1995b).
  - Five UST locations (SWMUs/AOCs 145, 175, 176, 280, and 298) will be further evaluated in the UST compliance program.
  - Four OWS locations (SWMUs/AOCs 84, 151, 173, and 199) will be further evaluated in the OWS compliance program. These OWSs are planned for removal.
  - Five vehicle wash racks (SWMUs/AOCs 110, 198, 201, 204, and 213) and one drop tank storage area (SWMU/AOC 14) were recommended for repair or replacement of cracked pavement. (SWMU/AOC 260 was also recommended to have pavement repaired; additional sampling will be performed at this SWMU/AOC in response to DTSC comments on the RFA.) This repair effort should be implemented soon, or a decision should be made to close these wash racks early in the base closure process.
  - Two less-than-90-day storage areas (SWMUs/AOCs 26 and 33) were recommended to have stained soil removed. This action, if not yet completed, should be implemented soon.
- Additional investigations of 13 SWMUs/AOCs and 1 TAA (SWMUs/AOCs 7, 9, 39, 46, 88, 131, 165, 171, 229, 244, 260, 267, and TAA 7) was performed for the preparation of the draft final addendum to the RFA report (BNI 1995b). The addendum presented the results and recommendations for the 14 locations investigated as well as recommendations for closure activities by 73 TAAs.

Of the 14 SWMUs/AOCs, five were recommended for transfer to the RAC contractor for limited surface soil removal and nine were recommended for no further action. Of the 73 TAAs surveyed, the draft final addendum to the RFA recommended the following:

- twenty-one TAAs are clean and vacant (as of November 1995),
- forty-two are recommended for wash down after removal of stored material,
- eight are recommended for simple decontamination and wash down after material removal,
- one is recommended for transfer to the RAC for surface soil removal (PCBs), and
- one will be reevaluated upon base closure.

#### **4.2.8 NPDES Permits**

The Station will comply with the conditions established in the NPDES permit while base closure is in progress and Station activities still contribute to the discharge points in the permit. When transfer of Station property is complete, the permit will be transferred or terminated.

#### **4.2.9 Oil/Water Separators**

To remain in compliance with the Station NPDES permit, the Station AC/S Installations Department will continue with repair and cleanup activities of existing OWSs. Only two OWSs still require repair and cleanup activities.

OWSs will be prioritized for removal in a similar manner as USTs (Section 4.2.1). Current plans for OWSs at the Station are detailed below.

- **Active OWSs.** All currently active OWSs are assumed to be essential to base operations and, as such, are assumed to be required until July 1999 for the Station to retain its discharge permit with the RWQCB Santa Ana Region. After 1999, these OWSs may need to be removed.
- **Inactive OWSs.** All inactive OWSs will be removed prior to July 1999.

#### **4.2.10 Silver Recovery Units**

Silver recovery units are located at the photography laboratory (Building 443) and medical clinic (Building 439). These treatment units are regulated in the same manner as OWSs under PBR regulations. It is planned that these treatment units will be operated until base closure. When the treatment units are removed, they will be closed under CCR Title 22 requirements.

The photography laboratory silver recovery unit was formerly located in Building 312. This location should be visited and inspected for evidence of releases from the former treatment unit. The inspection will dictate whether further investigation is needed.

#### **4.2.11 Lead-Based Paint**

Management and/or remedial actions for buildings containing LBP will be conducted in accordance with DoD and/or Navy policies described in Subsection 3.2.11. For residential buildings with LBP, actions will depend on the year the housing was constructed and/or whether the housing is planned for reuse or demolition. Actions for nonresidential buildings will depend on the physical condition of the LBP. Abatement of LBP for non-residential structures is not anticipated.

The results of the LBP survey conducted at family housing and related areas were released in December 1995. Additional basewide LBP surveys are not expected to be conducted at the Station; however, site-specific surveys may be conducted as needed.

#### **4.2.12 Air**

The Station will continue to comply with current air quality regulations during base closure activities. In addition, remedial actions taken at the Station will comply with appropriate rules from SCAQMD regarding emissions. ARARs regarding potential air quality impacts during remedial activities will be evaluated on a case-by-case basis during the planning/evaluation phase of remediation projects.

AB 531 was passed by the California Legislature and signed into law on 12 October 1995. Briefly, it states that tactical military equipment will be exempt from local district permitting requirements. Instead, the state will establish a statewide registration program by 01 January 1997. Furthermore, any registered portable internal combustion engines, including any turbine, used by the DoD or the National Guard exclusively for military tactical support or other federal emergency purposes, will not be subjected to any statewide or district emission control or emission limit. Since the interim guidance for the period 12 October 1995 through 31 December 1996 is to comply with local district regulations, no changes will be made to this March 1996 BCP. Future revisions of this document will reflect changes that may result from the enactment of AB 531.

### **4.3 NATURAL AND CULTURAL RESOURCES STRATEGIES**

Strategies for natural and cultural resources at MCAS El Toro are described below.

#### **4.3.1 Archaeological Resources**

In 1987, COE identified seven sites as being possibly eligible for listing on the National Historic Register. If reuse planning identifies possible impacts to these sites, the requirements of Section 106 of the National Historic Preservation Act must be met. If the land is transferred to a federal agency, the ultimate land owner must meet the requirements of Section 106. If the land is transferred to a non-federal agency, the USMC is responsible for meeting the requirements of Section 106 prior to transfer of property.

### **4.3.2 Historic Structures and Resources**

A survey of historic structures at MCAS El Toro has been completed by COE. This survey identified only the theater as possibly being eligible for listing on the National Historic Register. A determination of eligibility for this building will need to be completed as part of the disposal/reuse EIS.

### **4.3.3 Threatened and Endangered Species**

Annual surveys of threatened and endangered species will need to be conducted until the base closure in 1999 because the list of threatened and endangered species changes with time, and the species residing within the Station may also change with time. Currently several threatened and endangered species, including the California gnatcatcher, are known to exist in significant numbers on-Station. A conservation plan for the natural area at the Station was completed in March 1995.

### **4.3.4 Surface Water and Wetlands**

A survey of surface water and wetlands was completed for the natural area at the Station in March 1995. Further investigations of the remainder of the Station will be completed as part of the disposal/reuse EIS.

### **4.3.5 Paleontological Resources**

A survey of prehistoric and paleontological resources is not currently required. The area surrounding MCAS El Toro is known for its rich paleontological resources, so it may be likely that reuse construction will be addressed in the disposal/reuse EIS.

## **4.4 COMMUNITY INVOLVEMENT STRATEGY**

The Community Relations Plan, originally issued in 1991, provides a strategy for communication between MCAS El Toro, including the BCT, and the various parties interested in activities relating to the IRP at MCAS El Toro. These interested parties include federal, state, and local agencies and elected officials; special interest and environmental groups; public officials; and members of the general public.

MCAS El Toro has adopted the following approach to assure that a proactive community involvement program is carried out. The approach is based on key community concerns and meets the requirements of NEPA, CERCLA, CERFA, and the California Health and Safety Code, Section 25356.1, as given below.

- Implement President Clinton's Five-Point Plan for economic recovery in an expeditious manner.
- Enlist the support and full participation of local officials in coordinating community relations activities.
- Provide a full-time public affairs officer from the BRAC office.

- Provide timely, concise, and easily understood information to the public and media. (The schedule of technical activities, purpose of the activities, and the results will be readily available to interested members of the public. Inquiries will be handled quickly, courteously, and consistently by the BEC for MCAS El Toro. If information cannot be released to the public for national security reasons, a clear and simple explanation will be provided as to why the information must be withheld.)
- Educate interested officials and members of the general public about the procedures, policies, and requirements of the IRP. (Basic information about the IRP will be made available to help the community better understand the regulatory process.)
- Let the community set the pace of the community relations program. (A successful and effective program is tailored around the special requirements of the community. For MCAS El Toro, the structure, format, and schedule for community relations activities will remain flexible to meet the changing needs of the local community.)

The following activities will be used by the MCAS El Toro BCT to support the approaches to a proactive community relations program. These activities are in accordance with CERCLA and DTSC requirements.

- Maintain and update the project mailing list.
- Maintain the information repository.
- Update the administrative record file quarterly.
- Publish fact sheets to provide timely and clear information on the progress of the IRP.
- Publish public notices, as needed, to disseminate information about upcoming RAB meetings, and the RI/FS, Remedial Action Plan (RAP), and ROD phases of the IRP.
- Hold formal and informal public meetings as required during the IRP.
- Evaluate the effectiveness of this approach and update the Community Relations Plan as necessary to address concerns related to the IRP.

Public review and comment opportunities will be provided for documents related to installation restoration, including the RAP. The Community Relations Plan defines the length of these public comment periods. A responsiveness summary will also be prepared to respond to the comments received on the RAP and other applicable documents.

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**Table 4-1a**  
**Relationship Between IRP Sites, OUs, and Parcels**  
**(Sheet 1 of 1)**

Operable Unit	Operable Unit Definition	Parcel	IRP Site
OU-1	Groundwater on- and off-Station that is contaminated with constituents that have migrated from sites at MCAS El Toro	Not Applicable <sup>1</sup>	18
OU-2A	Sites that are believed to be contributing to the VOC plume in groundwater emanating from the southwest quadrant of MCAS El Toro.	4A/4B/5A Not Applicable <sup>2</sup>	24 25
OU-2B	Two landfill sites that require full investigation and will likely have a presumptive remedy applied.	5C 5C	2 17
OU-2C	Two landfill sites that will undergo further groundwater monitoring to confirm that groundwater is not being impacted.	2A 3B	3 5
OU-3	Various sites that are not related to the regional VOC contamination in groundwater.	2F 2A 5A 5A 4B 5A 5A 4A 4B 1A 1A 1D 5A 5A 1B 4B 5A	1 4 <sup>3</sup> 6 7 <sup>3</sup> 8 <sup>3</sup> 9 10 11 <sup>3</sup> 12 <sup>3</sup> 13 <sup>3</sup> 14 <sup>3</sup> 15 16 19 <sup>3</sup> 20 <sup>3</sup> 21 22

Notes: <sup>1</sup> Site 18 is limited to groundwater and, therefore, is not assigned a parcel number

<sup>2</sup> Site 25 consists of the Station washes which border or traverse the Station and, therefore, is not assigned a parcel number

<sup>3</sup> all or portions of these sites are scheduled for early action

Abbreviations: IRP – Installation Restoration Program

OU – operable unit

MCAS – Marine Corps Air Station

VOC – volatile organic compound



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**Table 4-1b**  
**Cleanup Sequence**  
**(Sheet 1 of 1)**

Parcel	OU	Environmental Risk	Reuse Priority	Cleanup Sequence	Reconcile Comments

**To date, only a general OU sequencing strategy has been developed for MCAS El Toro.**

**As additional information on OU sequencing becomes available, this table will be updated. Refer to Section 4.1.3 for additional information on OU sequencing strategy.**

Abbreviations: MCAS – Marine Corps Air Station  
OU – operable unit

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**Table 4-2**  
**Environmental Restoration Planned Early Actions**  
**(Sheet 1 of 4)**

Site (Database Tracking <sup>1</sup> )	Description	Action	Objective	Time Frame	Priority	Parcel
IRP3	Original Landfill	Removal action at drainage ditch (Unit 2).	Prevent infiltration of contaminants from storm water flows.	TBD	B <sup>2</sup>	2B
IRP3	Original Landfill	Potential capping as a possible removal action.	Prevent exposure of surface soil contaminants and infiltration of water.	TBD	C <sup>2</sup>	2B
IRP3	Original Landfill	Field screening at former incinerator (SWMU/AOC 194).	Further evaluate site for possible expedition of remediation	Fall 1995	C	2B
IRP4	Ferrocene Spill Area	For Unit 1, recommend no further investigation.	Declare NFI.	Fall 1995	TBD	2B
IRP4	Ferrocene Spill Area	For Unit 2, prepare EE/CA and Action Memorandum to recommend excavation. Collect samples from sidewalls and floor of excavation to confirm removal and to complete baseline risk assessment.	Provide additional characterization of nature and extent of contamination.	Winter 1996	TBD	2B
IRP5	Perimeter Road Landfill	Potential capping as a possible removal action.	Prevent exposure of surface soil contaminants and infiltration of water.	TBD	C	3B
IRP7	Drop Tank Drainage Area	For Unit 1, prepare EE/CA and Action Memorandum. Excavate contaminated soil, and perform confirmation sampling.	Prevent exposure to and migration of surface soil contaminants.	Winter 1996	TBD	4B

**Table 4-2**  
**Environmental Restoration Planned Early Actions**  
**(Sheet 2 of 4)**

Site (Database Tracking <sup>1</sup> )	Description	Action	Objective	Time Frame	Priority	Parcel
IRP7	Drop Tank Drainage Area	For Units 2, 3, and 4, define nature and extent of contamination based on Phase I RI results. Prepare EE/CA and Action Memorandum.	Identify and implement removal action.	Spring 1996	TBD	4B
IRP7	Drop Tank Drainage Area	For Unit 5, prepare EE/CA and Action Memorandum. Excavate contaminated soil; perform confirmation sampling.	Prevent exposure to/migration of surface soil contaminants.	Spring 1996	TBD	4B
IRP8	DRMO Storage Yard	Field screening.	Further evaluate site for possible expedition of remediation.	Spring 1996	C	4B
IRP11	Transformer Storage Yard	For entire site, define nature and extent of contamination based on Phase I RI results. Prepare EE/CA and Action Memorandum.	Identify and implement removal action.	Spring 1996	TBD	4C
IRP13	Oil Change Area	For Units 1 and 2, prepare EE/CA and Action Memorandum. Excavate contaminated soil, and perform confirmation sampling.		Winter 1996	TBD	1A
IRP14	Battery Acid Disposal Area	Clean out Catch Basin as housekeeping measure.	Prevent exposure to and migration of contaminants.	Winter 1996	TBD	1C

**Table 4-2**  
**Environmental Restoration Planned Early Actions**  
**(Sheet 3 of 4)**

Site (Database Tracking <sup>1</sup> )	Description	Action	Objective	Time Frame	Priority	Parcel
IRP14	Battery Acid Disposal Area	For Unit 1, prepare EE/CA and Action Memorandum. ESI (RI field screening).	Further characterized to identify extent of contamination and implement removal action.	Winter 1996	TBD	1C
IRP17	Communica- tion Station Landfill	Install fence around landfill.	Limit access to reduce exposure to physical hazards.	TBD	A <sup>2</sup>	5C
IRP17	Communica- tion Station Landfill	Potential capping as a possible removal action.	Prevent exposure of surface soil contaminants and infiltration of water.	TBD	C	5C
IRP19	ACER Site	For Units 1, 2, and 3, define nature and extent of contamination based on RI results. Prepare EE/CA and Action Memorandum for Unit 2 for removal of PCB contaminated soil.	Further characterize to identify extent of contamination and implement removal action.	Winter 1996	TBD	3A
IRP20	Hobby Shop	For Units 2 and 3, prepare EE/CA and Action Memorandum. Excavate contaminated soil and perform confirmation sampling.	Prevent exposure to and migration of surface soil contaminants	Winter 1996	TBD	1B
IRP20	Hobby Shop	For Unit 4, prepare EE/CA and Action Memorandum. Excavate contaminated soil and perform confirmation sampling.	Prevent exposure to and migration of surface soil contaminants	Spring 1996	TBD	1B

**Table 4-2**  
**Environmental Restoration Planned Early Actions**  
**(Sheet 4 of 4)**

Site (Database Tracking <sup>1</sup> )	Description	Action	Objective	Time Frame	Priority	Parcel
IRP22	Tactical Air Fuel Dispensing System	Field screening at western area (Unit 1) and eastern area (Unit 2)	Further evaluate site for possible expedition of remediation.	Spring 1996	C	5A
IRP25	Agua Chinon Wash	Collect treatability parameters. Characterize nature and extent of contamination. Prepare EE/CA and Action Memorandum.	Further characterize to identify extent of contamination and implement removal action.	TBD	TBD	<sup>3</sup>
IRP25	Bee Canyon Wash	Collect treatability parameters. Characterize nature and extent of contamination. Prepare EE/CA and Action Memorandum.	Further characterize to identify extent of contamination and implement removal action.	TBD	TBD	<sup>3</sup>

Notes: <sup>1</sup> this column refers to alpha-numeric database designation (refer to Table 3-1a)

<sup>2</sup> prioritization for early action from highest (A) to lowest (C)

<sup>3</sup> the Station washes (IRP Site 25) traverse or border the Station and are included in numerous parcels

Abbreviations: EE/CA – engineering evaluation/cost analysis

IRP – Installation Restoration Program

NFI – no further investigation

SWMU/AOC – solid waste management unit/area of concern

TBD – to be determined

**Table 4-3**  
**Environmental Compliance Planned Early Actions**  
**(Sheet 1 of 2)**

Site (Database Tracking <sup>1</sup> )	UST Number	Description	Action	Objective	Time Frame	Priority	Parcel
UST 398	398	JP-5 Tank Piping Leak	Removals for free product, vapor, and groundwater.	Remediate vadose and groundwater contamination.	1995	A	2C
UST 529	529	SWMU/AOC 145 (inactive waste oil tank)	Remove tank.	Remove possible sources of groundwater contamination.	1996 or 1997	A	4C
UST 672B	672B	SWMU/AOC 176 (inactive waste oil tank)	Remove tank/ conduct soil venting treatment pilot project.	Remove possible sources of groundwater contamination.	1997	B	4B
Tank Farm 1	184, 185, 186, 187	4 inactive tanks (SWMU/AOC 275 and 276)	Remove 4 tanks.	Remove possible sources of groundwater contamination.	1996	A	1D
Tank Farm 3	188, 190, 192, 193, 194, 195	2 active/6 inactive tanks	Remove 6 inactive tanks.	Remove possible sources of groundwater contamination.	1996	A	1B
Tank Farm 4	216 - 218	3 inactive tanks	Remove 3 inactive tanks.	Remove and close 3 USTs under Title 22.	1996	A	2A
Tank Farm 555	550	Release of petroleum hydrocarbons at one tank indicated by vadose zone monitoring	Stop leak(s)/ investigate and remediate release.	Remove possible sources of groundwater contamination.	1995	A	2D
Tank Farms 5 and 6	(TF 5) 210, 212, 214; (TF 6) 196 - 205	5 active/3 inactive tanks at TF 5 2 active/2 inactive tanks at TF 6	Remove 5 inactive tanks.	Remove possible sources of groundwater contamination.	1996	A <sup>2</sup>	2B



**Table 4-3**  
**Environmental Compliance Planned Early Actions**  
**(Sheet 1 of 2)**

Site (Database Tracking <sup>1</sup> )	UST Number	Description	Action	Objective	Time Frame	Priority	Parcel
OWS 671		SWMU/AOC 173	Conduct soil venting treatment pilot project.	Remove possible sources of groundwater contamination.	TBD	C	4B
OWS 672A		SWMU/AOC 175 (inactive OWS)	Remove OWS/ conduct soil venting treatment pilot project.	Remove possible sources of groundwater contamination.	1995/TBD	B	4B

Notes: <sup>1</sup> this column refers to alpha-numeric database designation (refer to Table 3-1a) or, if more than one location of concern is included, a general descriptor is provided (e.g., for Tank Farms)

<sup>2</sup> high priority due to benzene plume in area

Abbreviations: MCAS – Marine Corps Air Station  
 BCP – Base Realignment and Closure (BRAC) Cleanup Plan  
 UST – underground storage tank  
 SWMU/AOC – solid waste management unit/area of concern  
 TBD – to be determined  
 TF – Tank Farm  
 OWS – oil/water separator

## Chapter 5

# Environmental Master Schedules

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This chapter presents the Master Schedule of anticipated activities for the MCAS El Toro environmental programs and a summary of anticipated BCT and BRAC Project Team meetings. The Master Schedule is summarized in four distinct schedules as follows:

- Environmental Restoration Program,
- Mission/Operational-Related Compliance Programs,
- Closure-Related Compliance Programs, and
- Natural/Cultural Resources Activities.

The Master Schedule is based on a July 1999 closure date for the Station, and includes general activities for each program. At this time, all of the schedules have not been finalized and approved by the entire BCT.

Appendix A provides a summary of costs for each of the environmental programs mentioned above on a year-by-year basis through Station closure. The cost summary for Appendix A is currently being developed by a DON contractor and will be available later in 1996.

A property disposal/transfer evaluation model is currently under development for MCAS El Toro to provide the capability for quick, real-time evaluation of base closure and property disposal/transfer strategies. This model will provide MCAS El Toro with the ability to track the various LOCs by geographical location (i.e., by parcel boundaries) and the ability to assign cost and a time frame for the remediation of each parcel based on the various LOCs contained within it. A discussion of some of the aspects and capabilities of this model is presented at the end of this chapter.

## 5.1 ENVIRONMENTAL RESTORATION PROGRAM

MCAS El Toro IRP sites are grouped into three main OUs. These OUs have been subdivided according to characteristics of the various IRP sites, as described in Chapter 3.

The schedules for OU-1, OU-2A, OU-2B, OU-2C, and OU-3 are shown in Figure 5-1 (Master Program Schedule Installation Restoration Program).

IRP activities have been conducted at the Station since 1985. A summary of the historical expenditures for the IRP at MCAS El Toro is provided in Table A-5 (Appendix A). This table represents funds allocated through fiscal year 1994.

## 5.2 COMPLIANCE PROGRAMS

The Master Schedule for compliance programs being conducted on-Station is summarized in Figures 5-2 (Master Program Schedule Mission-Related Compliance) and Figure 5-3 (Master Program Schedule Closure-Related Compliance).

The schedules for mission/operational-related compliance activities (Figure 5-2) include maintenance and monitoring requirements to maintain all of the current environmental operating permits (e.g., UST, air emissions, and NPDES permits).

The schedules for closure-related compliance activities (Figure 5-3) include removal of nonessential USTs, closure of the inactive RCRA storage facility at Building 673-T3, and follow-up investigations at the nine SWMUs/AOCs identified for further action by DTSC. It is anticipated that as the Station moves nearer to the closure date of July 1999, mission/operational-related compliance activities will transition into closure-related activities.

### **5.3 NATURAL AND CULTURAL RESOURCES**

Natural and cultural resource activities are summarized in Figure 5-4 (Master Program Schedule Natural/Cultured Resources Activity). Three management activities have been identified and are assumed to continue until the Station closes. These include management of threatened and endangered species, biological resources management, and erosion control. Surveys for on-Station wetlands and sensitive habitats were completed in 1995.

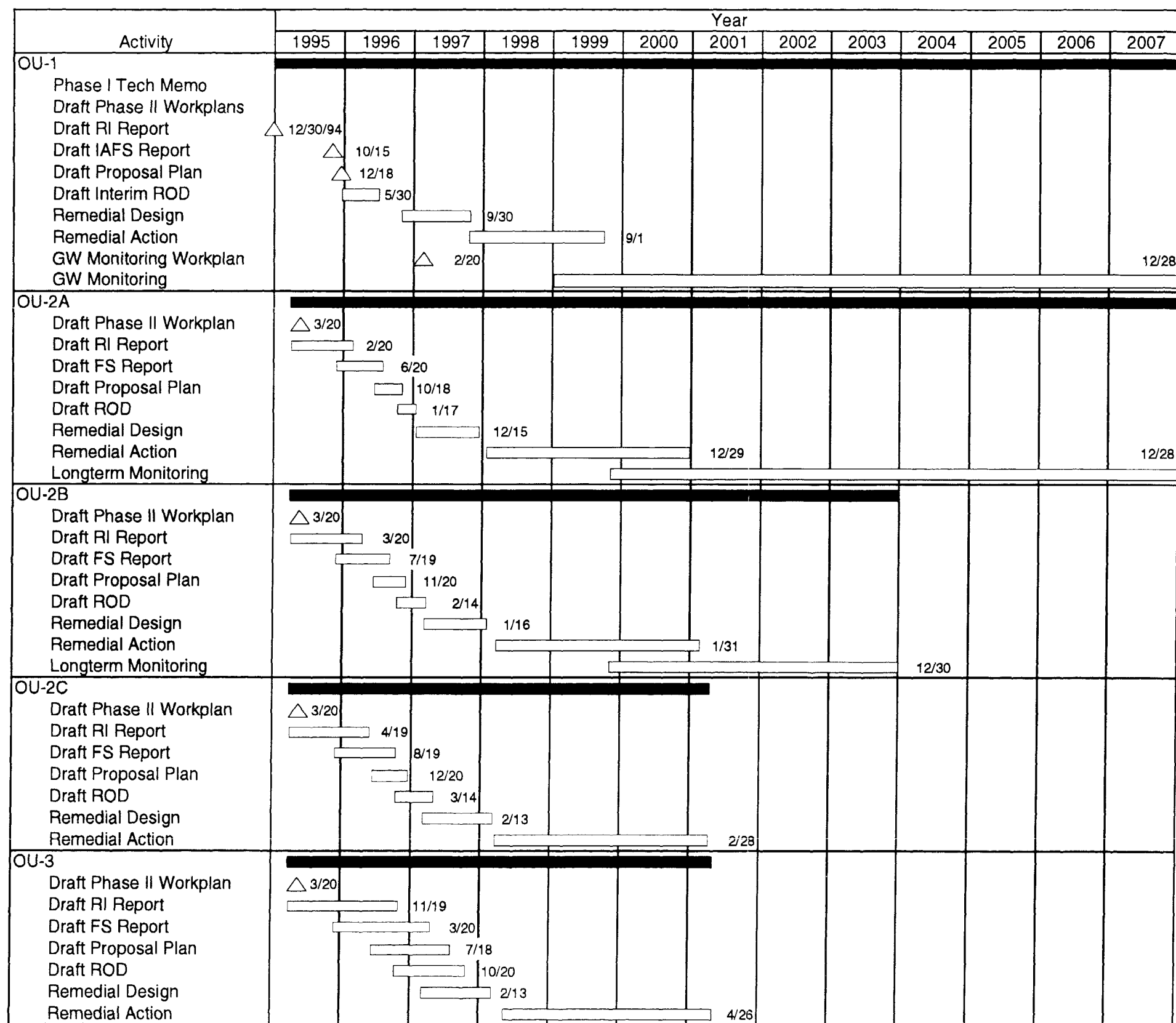
A meeting schedule for the BCT is provided in Table 5-1 (BRAC Cleanup Team Meeting Schedule). At a minimum, the BCT will meet on a monthly basis to discuss technical issues, scheduling issues, program status, and team building. Additional meetings will be scheduled as required.

**Table 5-1**  
**Project Team Meeting Schedule**  
**(Sheet 1 of 1)**

Date	Topic
10 January 1996	BCT Meeting
24 January 1996	BCT Meeting
February 1996	BCT Meetings, BCP Update Meeting
March 1996	BCT Meetings
April 1996	BCT Meetings
May 1996	BCT Meetings
June 1996	BCT Meetings
July 1996	BCT Meetings
August 1996	BCT Meetings
September 1996	BCT Meetings
October 1996	BCT Meetings
November 1996	BCT Meetings
December 1996	BCT Meetings

Abbreviations: BCP – BRAC Cleanup Plan  
BCT – BRAC Cleanup Team

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Source: Nuzum, 1996

#### LEGEND

- △ Milestone
- Summary
- Task

OU - Operable Unit  
ROD - Record of Decision

This figure presents the Federal  
Facilities Agreement schedule.

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

#### Master Program Schedule Installation Restoration Program

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Figure 5-1

Date

3/1/96

**PAGE NUMBER** 5-6

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Activity	Year					
	1995	1996	1997	1998	1999	2000
Installation Closure Date					△ 7/15	
UST Management/Monitoring						7/15
Maintenance of Air Permits						7/15
Continued NPDES Monitoring						7/15

**LEGEND**

△ Milestone  
 Task

UST - underground storage tank  
 NPDES - National Pollution Discharge  
 Elimination System

Southwest Division  
 Naval Facilities Engineering Command

MCAS El Toro, CA

**Master Program Schedule**  
**Mission/Operational-Related Compliance**

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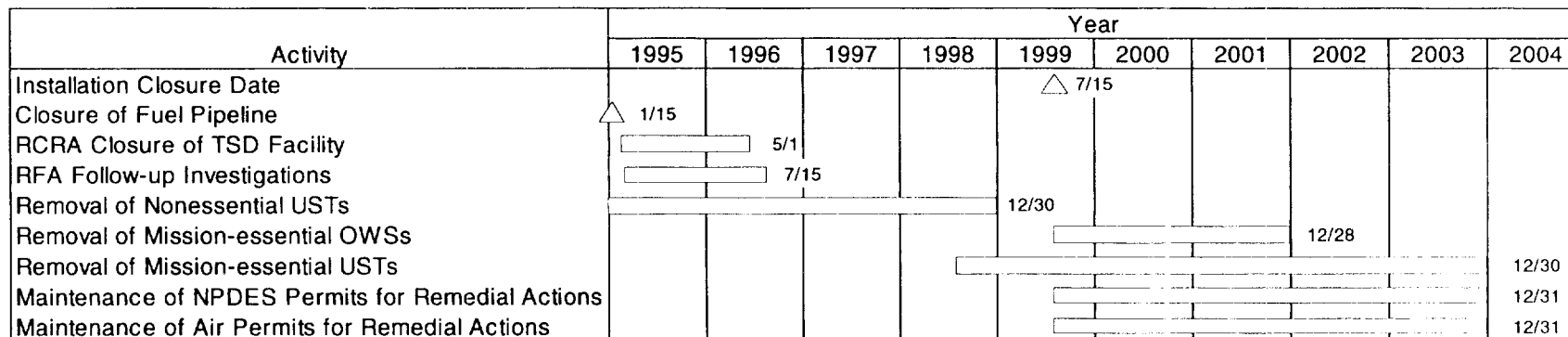
**Figure 5-2**

Date

3/1/96



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**LEGEND**

△ Milestone  
 [ ] Task

RCRA - Resource Conservation and Recovery Act  
 RFA - RCRA Facility Assessment  
 TSD - treatment, storage and disposal  
 UST - underground storage tank  
 OWS - oil/water separator  
 NPDES - National Pollution Discharge Elimination System

Source: Nuzum, 1996

Southwest Division  
 Naval Facilities Engineering Command

MCAS El Toro, CA

**Master Program Schedule  
 Closure-Related Compliance**

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**Figure 5-3**

Date

3/1/96

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Activity	Year					
	1995	1996	1997	1998	1999	2000
Installation Closure Date					△ 7/15	
Wetland Survey	□ 3/15					
Sensitive Habitats Survey	□ 3/15					
Survey and Management of Threatened and Endangered Species						7/15
Biological Resources Management						7/15
Erosion Control						7/15
Review and Assessment of Archeological Survey						7/15

**LEGEND**

Milestone



Task

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

**Master Program Schedule  
Natural/Cultural Resources Activity**

File No.

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**Figure 5-4**

Date

3/1/96

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## Chapter 6

# Technical And Other Issues To Be Resolved

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This chapter summarizes pending technical, administrative, and other issues to be resolved by the BCT and Project Team. Specifically, this chapter addresses information and data management, data gaps, ambient and background levels, risk assessments, basewide remediation strategy, interim monitoring of groundwater and storm water, excavation of contaminated materials, conceptual models, cleanup standards, initiatives for accelerating cleanup, remedial actions, technology review, hot spot removals, identification of clean properties, overlapping phases of the cleanup process, improved continuing procedures, interfacing with the CRP, bias for cleanup instead of studies, expert input on contamination and remedial actions, presumptive remedies, partnering, EBS updates, the policy for on-site decision making, air emission credits, and caretaking responsibilities.

### 6.1 DATA USABILITY

In order to obtain data of usable quality for decision making, data quality management is necessary. Management steps include defining data quality objectives, setting procedures for quality assurance/quality control practices, and developing data management procedures that provide for accurate and easy information storage, retrieval, and transfer.

To date, major data collection programs for MCAS El Toro include the IRP (RI/FS) and the RFA. An extensive amount of analytical data was collected for both programs under agency-approved quality assurance project plans (QAPPs). Analyses for Phase I work were generally performed at data quality level 4, and analytical data from both programs were checked via data validation efforts. All ongoing analyses for Phase II work will be performed at data quality level 4, and all analytical data will be validated at 100 percent. The validated Phase I data from these programs have been loaded into the International Technology Environmental Management System (ITEMS) database. The Phase II data is being loaded into the Bechtel Environmental Integrated Data Management System (BEIDMS) database as it is generated.

Historical data prior to or outside of these major programs may need to be evaluated on a case-by-case basis for data usability and quality.

### 6.2 INFORMATION MANAGEMENT

Analytical data from both the RI/FS and the RFA Programs are required to conform to the Navy Environmental Data Transfer Standards (NEDTS), which specify the types and quality of environmental data collected at Navy and Marine Corps Installations. All MCAS El Toro environmental data will eventually be transferred to the Navy in a standard format to create a master database for the station. Data from future investigations should conform to the NEDTS. Currently, data from UST removals performed at the Station are not in the database.

Geographical data for MCAS El Toro have been input into a geographical information system (GIS) database. The GIS base map currently has the location of over 800 LOCs and the zone/parcel boundaries for base closure digitized into the system. IRP groundwater wells and analytical data are also included in the GIS database.

### **6.2.1 BRAC Cleanup Team Action Items**

The BCT has identified the following information management action items for completion by NAVFAC and SWDIV:

- evaluate historical, geological, and geophysical data used for risk management which do not currently conform to the NEDTS for transfer to the Navy;
- assure that data from past and future data collection activities conform to NEDTS; and
- assure database integrity (i.e., it is current and correct for all users).

### **6.2.2 Rationale**

Accessibility of data to the BCT will assist in the review and management of data, and expedite the ability of the BCT to make decisions.

### **6.2.3 Status/Strategy**

In order to accomplish their data management goals, the BCT will assure:

- the continuing receipt of data in electronic form from the laboratories involved with work at MCAS El Toro;
- conformance of data from past, present and future contractors to the NEDTS format; and
- update of environmental databases as appropriate.

## **6.3 DATA GAPS**

Phase II of the RI is currently being conducted at the Station. The Work Plan established for this effort was based on filling data gaps that may have existed after completion of Phase I.

Listed below are currently identified data gaps that will need to be addressed by the BCT.

- The UST Tiger Team will continue to identify/verify USTs and associated data (e.g., capacity, material of construction, location) at the Station. This team will also identify strategies for UST management with respect to essential Station operation and base closure activities.

## **6.4 AMBIENT AND BACKGROUND LEVELS**

Background levels for MCAS El Toro were addressed as part of the preparation of the draft Phase II RI/FS Work Plan submitted in November 1993. The following sections present discussions of activities conducted to date that can be used for evaluating ambient and background levels for surface soils, groundwater, surface water, and sediments.

### **6.4.1 Surface Soils**

Background levels for metals and pesticides/herbicides in soils at MCAS El Toro were established in the draft Phase II RI/FS Work Plan. The upper range of naturally occurring metal concentrations and pesticide/herbicide concentrations was estimated by calculating the 99th percentile (50 percent confidence level) of the log normal distribution of the data values. The results of the statistical analysis for the metal parameters and pesticides/herbicides in background soil samples are presented in Tables E-2a and E-2b, respectively (Appendix E).

Regulatory agencies are currently reevaluating their decision on the background levels established in 1993.

Anthropogenic reference levels of polynuclear aromatic hydrocarbons (PAH) are being determined during Phase II activities.

### **6.4.2 Groundwater**

The initial draft Phase II RI/FS Work Plan (November 1993) proposed geochemical analysis of the RI data as part of the OU-1 RI report to evaluate ambient concentrations of organic compounds in groundwater. Groundwater samples are currently being collected in accordance with the current groundwater sampling plan and remedial investigation work plans. The BCT will consider establishing regional background concentrations for inorganic compounds in groundwater after the samples are collected and analyzed.

### **6.4.3 Sediment**

For screening purposes for the draft Phase II RI/FS Work Plan, sediment data collected during the Phase I RI were compared to the reference background concentrations for inorganic compounds in sediment samples from major drainages. Additional upgradient soil sampling proposed as part of the investigation of RI/FS Site 25 (Major Drainages) will be evaluated to assess concentrations of organic chemicals, particularly pesticides and herbicides, that may be migrating onto MCAS El Toro through surface drainage.

### **6.4.4 BRAC Cleanup Team Action Items**

The BCT has identified the following action items:

- address agency concerns for background levels for soils; and



- reach consensus on background levels for storm water, sediment, and groundwater after Phase II investigation and additional groundwater sampling events are completed.

#### **6.4.5 Rationale**

Background concentrations of elements and compounds in the environment at MCAS El Toro must be determined for use in the Baseline Risk Assessment computations and/or as screening criteria. Media to be addressed include surface soils, groundwater, surface water, and sediments.

#### **6.4.6 Status/Strategy**

The BCT has agreed on the following strategy for background levels at MCAS El Toro.

- Evaluate groundwater quality data produced from continuing groundwater monitoring activities to evaluate background levels for groundwater. Additional groundwater sampling will be initiated in 1996.
- Evaluate data from surface water sampling planned to be performed as part of the Phase II RI to determine background levels in surface waters entering the Station.
- Determine soil sample locations, frequency, and analytical methods for completion of work scheduled for early 1996 (PAH only).

### **6.5 RISK ASSESSMENTS**

There are three types of risk assessments that will be used at MCAS El Toro:

- baseline risk assessments performed at RI FS sites, which estimate the risks to human health if no response action is undertaken at the site and, thereby, provide decision makers information useful in identifying the most appropriate remedial action alternatives ;
- streamlined risk assessments performed on removal action sites which provide support for EE/CAs for removal actions; and
- ecological risk assessments which aim to assess current and potential risks to the ecological environment posed by chemical contamination.

#### **6.5.1 BRAC Cleanup Team Action Items**

No Project Team action items are currently identified for risk assessments.

#### **6.5.2 Rationale**

A baseline risk assessment and streamlined risk assessments must be performed to assist the BCT in identifying the most appropriate remedial action alternatives for IRP and remedial action sites in order to protect human health. In addition, an ecological risk assessment will be prepared for the Station to protect the environment.

### **6.5.3 Status/Strategy**

The draft Phase II RI/FS Work Plan designed sampling schemes that will provide sufficient sample data to conduct a baseline risk assessment and ecological risk assessment. The baseline risk assessment will be prepared in conjunction with the Phase II RI and will be used to establish the condition of sites which, in turn, will determine whether response actions should be taken. The Phase II FS will address cleanup standards for those sites where response actions are recommended.

## **6.6 BASEWIDE REMEDIAL ACTION STRATEGY**

The strategy for basewide remedial action contains the following components.

- Removal operations must continue with minimal delays in order to expedite the restoration activities and address environmental issues as developed by the ongoing investigations.
- The BCT will continue to focus on early action activities already identified and early action items discovered as investigations continue.
- The BCT has agreed to withdraw two OU-3 units (Site 15, Unit 1 and Site 19, Unit 2) from the IRP based on the petroleum exclusion in CERCLA.
- The BCT will continue to evaluate the withdrawal of OU-3 sites from the CERCLA process under CERCLA petroleum exclusion.
- The transfer of sites from RI/FS process to the EE/CA process will be recommended for timely and cost effective cleanup. Seven EE/CAs were submitted for public review in October 1995. A minimum of three new EE/CAs are scheduled to be prepared in 1997.
- To successfully accomplish the early transfer of parcels at MCAS El Toro, there will need to be a geographical component to the evaluation and prioritization of LOCs for remedial action.
- The numerous USTs located on the Station will need significant attention since it is assumed that all USTs 25,000 gallons or greater and 50 percent of the remaining USTs (approximately 60 percent of Station USTs) have leaked and may require some form of remedial action. A UST Tiger Team has been formed to address UST issues at the Station. Members of the Tiger Team include representatives from the Station EO, Engineering Department, Planning Department, BRAC Office, and SWDIV. The Tiger Team will focus on compliance, removal, remediation, and closure of UST sites.
- The tenant migration schedule and operational constraints should be considered as parcels are prioritized for remedial actions and transfer.
- Schedule considerations for conducting remedial work simultaneously with other sites or scheduling mobilization for remediation of individual sites should be considered in an effort to minimize costs.

The reuse plan being developed by the community is controversial. When an acceptable reuse plan is completed, additional remedial action strategies may need to be considered.

## 6.7 INTERIM MONITORING OF GROUNDWATER AND STORM WATER

At present, two groundwater sampling events have been completed at MCAS El Toro in addition to the sampling of other monitoring and irrigation wells in the area that were not included in the sampling events. Results of the two sampling events are presented in the Phase I RI Technical Memorandum (Jacobs 1993a). A groundwater monitoring plan was developed by the Navy. This plan was reviewed by the BCT and was finalized on 28 April 1995. The groundwater sampling plan describes the frequency and analytical parameters for the extended sampling program. A QAPP, a health and safety plan (HSP), and a sampling and analysis plan (SAP) were specifically developed for the program. The program was implemented in late 1995. Based on the results of the first round of sampling, the BCT may adjust the sampling program and proceed with the implementation of four consecutive rounds of basewide groundwater sampling. Any change in the sampling plan must be agreed upon by the BCT. After this sampling program is completed, a long-term groundwater monitoring plan will be developed and implemented. That plan will be submitted in draft form on or before 20 February 1997.

Three rounds of storm water sampling have been conducted as part of the Phase I RI. An additional round of storm water sampling was conducted subsequent to the Phase I RI. Results of the first three rounds of storm water sampling are presented in the Phase I RI Technical Memorandum (Jacobs 1993a). Analytical data for the subsequent sampling event and the current Phase II RI sampling will be presented in the Phase II RI reports. Under an existing NPDES permit, MCAS El Toro periodically samples surface waters that migrate off the station.

Two ponded water sampling events were conducted in mid-1994. Analytical data for these sampling events will also be included in the Phase II RI reports.

## 6.8 EXCAVATION OF CONTAMINATED MATERIALS

Excavation of contaminated materials will be necessary for some response actions taken at the Station. Such response actions include removal of contaminated soil at former UST locations, removal actions, site characterization activities, and *in situ* remediation.

Prior to initiating excavation activities, the BCT will need to consider the following waste-handling issues:

- sampling and analytical protocols for characterization of wastes and for verification of cleanup. These protocols are contained in site-specific plans such as the investigation-derived waste (IDW) plan;
- site-specific parameters and limits to determine if the excavated material is hazardous;
- disposal methods and facilities for nonhazardous wastes that may or may not be contaminated with toxic or TSCA materials (e.g., PCBs or asbestos); and
- development of an IDW plan.

Management of contaminated materials will be in accordance with regulations current at the time of the excavation activities.

## **6.9 PROTOCOLS FOR REMEDIAL DESIGN REVIEWS**

Remedial design reviews will be performed in accordance with the QAPP developed for the remedial design effort.

## **6.10 CONCEPTUAL MODELS**

### **6.10.1 BRAC Cleanup Team Action Items**

No Project Team action items are currently identified for conceptual site models.

### **6.10.2 Rationale**

Conceptual site models are used to show relationships between potential sources, exposure pathways, and receptors. Complete exposure pathways include sources, mechanisms of contaminant release, transport media, exposure points, and exposure routes at points of receptor contact.

### **6.10.3 Status/Strategy**

Conceptual models for the MCAS El Toro IRP sites were developed as part of the Draft Phase II RI/FS Work Plan based on existing data from the Phase I RI. The conceptual models are provided in Appendix E of this document. The conceptual models may be revised as additional information on the IRP sites becomes available. As appropriate, the conceptual models in Appendix E may be replaced or supplemented.

## **6.11 CLEANUP STANDARDS**

Preliminary cleanup standards for the IRP sites currently are based on the preliminary risk assessment prepared as part of the draft Phase II RI/FS Work Plan completed in November 1993.

Groundwater cleanup standards are being evaluated as part of the FS for OU-1. Metals concentrations in shallow soils will be compared to background levels for metals (Section 6.4).

### **6.11.1 BRAC Cleanup Team Action Items**

- Establish cleanup standards for each site in site-specific feasibility studies.

### **6.11.2 Rationale**

Cleanup standards will help determine the extent of removal or remediation, and the designation of cleanup areas.

### **6.11.3 Status/Strategy**

- Continue to review and evaluate preliminary cleanup standards.

- Evaluate background levels on a site-by-site basis.

## **6.12 INITIATIVES FOR ACCELERATING CLEANUP**

As an ongoing action item, the BCT will identify and evaluate opportunities for accelerating cleanup throughout the base closure process. Some currently identified methods for acceleration include:

- use of the Superfund Accelerated Cleanup Model for timely and efficient cleanup. Portions of nine sites (Sites 4, 7, 8, 11, 12, 13, 14, 19, and 20) were selected for non-time-critical removals. Seven EE/CAs have been completed and were issued for BCT and public comments in October 1995. At least three additional EE/CAs are scheduled for completion in 1997;
- withdrawal of petroleum-contaminated sites from the IRP under CERCLA petroleum exclusion. Sites approved for withdrawal will be addressed as petroleum sites with regulatory oversight by the RWQCB Santa Ana. To date, portions of two sites have been withdrawn;
- use of presumptive remedies as appropriate for site remedial action. The BCT will consider using innovative technologies that may accelerate the cleanup process;
- fast-tracking of Navy contracting procedures for cleanup activities;
- identifying portions of sites that may be appropriate for early remedial action;
- use of mobile laboratories for in-field decision making;
- bimonthly field meetings during Phase II fieldwork to expedite decision making;
- field-screening analytical methods;
- accelerated analytical turnaround times;
- concurrent document review between BCT members;
- staggered schedules and subdivided OUs in an effort to prioritize remediation at IRP sites. This will allow IR sites, which are suspected of posing greater risk to human health and the environment, to be addressed first;
- investigation of source areas for potential early remedial actions;
- signing of FFA in October 1990, by U.S. EPA, DTSC, RWQCB Santa Ana, and the Navy to conduct an RI/FS. Details of the FFA are discussed in Section 3.1.1; and
- specified document review periods for the regulatory agencies as prescribed in the FFA. Primary documents (e.g., Draft RI Reports, Community Relation Plans) have a 60-day review period and secondary documents (e.g., Treatability Studies, Site Characterization Summaries, RFAs) have a 30-day review period.

### **6.13 REMEDIAL ACTIONS**

The BCT will maintain a bias toward implementing effective and expedited remedial actions. Implementation of agency-approved presumptive remedies for expediting cleanup will be favored during the course of the base closure effort at MCAS El Toro.

### **6.14 REVIEW OF SELECTED TECHNOLOGIES FOR APPLICATION OF EXPEDITED SOLUTIONS**

Review of technologies for expediting remedies will be conducted during the RI/FS. Presumptive remedies, as appropriate, will be considered for sites. Publications such as Treatment Technologies Applications Matrix for Base Closure Activities prepared by the California Military Base Closure Environmental Committee, November 1993, will also be reviewed as part of the evaluation performed in selecting technologies.

### **6.15 HOT SPOT REMOVALS**

At this time, no hot spots (i.e., sites that pose an immediate danger to the environment and/or human health) have been identified at the Station. However, suspect hot spot areas are currently being investigated: RFA PCB areas, RI/FS landfills, and RCRA UST sites. In the event that any hot spots are discovered during these investigations, the BCT will give such sites high priority for early action.

### **6.16 IDENTIFICATION OF CLEAN PROPERTIES**

The environmental condition of the Station was evaluated in the CERFA report and the basewide EBS reports dated 1 April 1995. The draft EBS originally divided the base into 20 parcels. After discussion with the regulatory agencies, the Marines decided to drop the parcel designation and nominate Area Type 1 parcels as CERFA eligible. The U.S. EPA reviewed the CERFA and EBS reports and concurred that 2,982 acres of MCAS El Toro can be classified as uncontaminated under CERFA. Cal-EPA agreed with U.S. EPA's decision.

#### **6.16.1 BRAC Cleanup Team Action Items**

The BCT will continue to conduct site characterizations and response activities to identify clean property and to remediate areas on the Station. The BCT will provide input to the ETLRA concerning response activities during the development of the CRP to facilitate the transfer of property.

#### **6.16.2 Rationale**

MCAS El Toro intends to complete military conversion and transfer of the Station by 1999. Only property which has been designated as ECP area types 1 through 4 are eligible for transfer. The areas of the Station designated as ECP area types 5, 6, and 7 require future investigation and/or remediation before they are eligible for transfer.

### **6.16.3 Status/Strategy**

To facilitate property transfer, the BCT will develop strategies to integrate the response activities with the future redevelopment plans for the Station.

## **6.17 OVERLAPPING PHASES OF THE CLEANUP PROCESS**

As an ongoing effort, the BCT will attempt to identify phases of the cleanup process that can be overlapped to reduce the time and cost required for completion of the cleanup process. As such, areas of overlap include the following:

- The RFA was conducted concurrently with the Phase I RI.
- Treatability studies are being conducted concurrently with the early stages of the OU-2 RI.
- EE/CAs were conducted simultaneously with Phase II RI activities. (The EE/CAs are discussed in Section 3.1 of the BCP).
- Phase II RI/FS activities for CLEAN II CTOs 73, 76, and 79 are being conducted simultaneously.
- Cooperative facilities for conducting RCRA, UST, and RI/FS activities are being utilized.

## **6.18 IMPROVED CONTRACTING PROCEDURES**

Environmental restoration at the Station will require the Navy to aggressively issue numerous contracts for investigation and remediation activities. Flexible contracting procedures must be implemented to expedite installation restoration and meet established closure schedules.

In an effort to improve the efficiency of installation restoration activities, the Navy approved an accounting system which gives CLEAN II contractors discretion in awarding up to \$1.3 million for subcontractors activities. This accounting system has improved the efficiency of investigation and remediation activities, thereby reducing the cost for environmental restoration activities. The improvements in accounting and contracting procedures are a result of the increasing interaction between the CLEAN II contractors and the RAC. Increased communication between the RAC and CLEAN II team has produced better and faster cleanup of the Station.

The BCT will continue to get input from the Station contracting officer at SWDIV and other members of the Project Team on new approaches to contracting for fast-track cleanup of the Station.

## **6.19 INTERFACING WITH THE COMMUNITY REUSE PLAN**

To date, no reuse plan has been prepared for MCAS El Toro. Regular meetings and clear communication between the BCT members and the LRA will be critical to incorporate reuse plans in the restoration plans for the Station.

## **6.20 BIAS FOR CLEANUP INSTEAD OF STUDIES**

The Navy's current position emphasizes expedited remedial actions and attempts to avoid traditional, lengthy site characterization studies and prolonged RI/FS activities.

To date, the BCT has successfully expedited the RI/FS process by moving sites into the EE/CA process, thereby decreasing the time and cost for cleanup. Furthermore, the BCT has approved the withdrawal of two OU-3 units from the IRP under the CERCLA petroleum exclusion, and they are actively working on withdrawing an additional nine OU-3 units. Soil sampling has indicated that the primary chemicals of potential concern (COPCs) for these 11 units are petroleum hydrocarbons. If approved for withdrawal, the sites would be addressed as petroleum sites with regulatory oversight by the RWQCB Santa Ana.

BCT members should collaborate with agencies in devising future work plans, identifying cleanup criteria, and selecting remedial actions in an effort to aggressively pursue cleanup instead of studies and data collection.

Sufficient sampling and analysis are required to assess the need for cleanup. Excessive statistical analysis and unrealistic numbers of sampling locations could be avoided by addressing the following issues:

- limited confirmatory laboratory tests are accepted along with field data;
- analysis is limited only to site-specific parameters;
- indicator parameters are accepted for the majority of the routine tests; and
- sample numbers and sample frequencies should not be associated with theoretical and/or statistical calculations without regard to site history, site geotechnological characteristic, and history of past operations.

## **6.21 EXPERT INPUT ON CONTAMINATION AND POTENTIAL REMEDIAL ACTIONS**

The BCT and RI/FS team should continue to consult with experts to provide input on faster investigative techniques and potential remedial actions to meet the aggressive cleanup schedules established for the Station.

## **6.22 PRESUMPTIVE REMEDIES**

Presumptive remedies are remedies that, based on past evaluations of remedial alternatives at similar sites, can be presumed to be an effective, optimal remedy. Presumptive remedies can expedite the evaluation process normally involved in selecting a remedial alternative for a site through the FS process. The BCT will assure that presumptive remedies are considered for implementation at appropriate sites at the Station.



### **6.23 PARTNERING (USING INNOVATIVE MANAGEMENT, COORDINATION, AND COMMUNICATION TECHNIQUES)**

A partnering agreement among the Project Team is essential for efficient management of the base closure process. As a group, the BCT has established a partnering agreement and Team Charter that incorporates the latest and most efficient management techniques to coordinate installation restoration activities.

The following Team Charter agreement was developed for MCAS El Toro during a team building seminar held in October 1994:

We, the MCAS El Toro partners, commit to effectively working together to maximize restoration and reuse of MCAS El Toro by 1999. We will accomplish this goal through teamwork, dedicated and focused participation, our ethics outlined below, and effective communication between all partners.

We want the project to be enjoyable to work on and will work together with trust and respect, and will ensure that all team members interests impact decisions. Problems will be resolved quickly or escalated if appropriate, and by team members closest to the issue. As partners, we commit to communicating our mission and partnership goals to new project members and encourage them to embrace this partnership.

Our mutually agreed upon ethical standards are listed below.

#### **Code of Ethics**

- Integrity
- Trust
- Model the behavior you expect from others
- Sincere
- Empathetic
- Value other's opinions
- Responsible
- Honor diversity
- Honesty
- Openness
- Dependable
- Respectful
- Be a good listener
- Accountable
- Have fun
- Credible
- Be candid

### **6.24 UPDATING THE EBS AND NATURAL/CULTURAL RESOURCES DOCUMENTATION**

Site-specific EBSs may be necessary to summarize the information acquired since the preparation of the basewide EBS. The BCT will evaluate the need for site-specific EBSs on a case-by-case basis.

Natural and cultural resources documentation provided in this BCP will be updated as additional information becomes available.

### **6.25 IMPLEMENTING THE POLICY FOR ON-SITE DECISION MAKING**

On-site decision-making authority during future field efforts at MCAS El Toro will be an essential part of expediting the investigation and cleanup effort at sites. While field efforts are in progress, the BCT will periodically check that on-site decision making is occurring.

**6.26 AIR EMISSION CREDITS**

Air emission credits are considered valuable assets that will require careful consideration for redistribution. To date, the DON has not finalized a strategy for the redistribution of air emission credits. It is expected that air emission credits will become available as the squadrons at the MCAS El Toro migrate and the mission begins to close. These credits may potentially be used at other federal facilities or by the community.

**6.27 CARETAKING RESPONSIBILITIES**

MCAS El Toro is scheduled to close in July 1999. The caretaker of the installation, during the period from when the Station closes through the final transfer of property, has not been identified. It is expected that the caretaker will be responsible for various duties, including coordination with regulatory agencies, reuse entities, public groups, and remediation contractors. In addition, the caretaker will be responsible for performing other tasks in support of the mission transfer, such as personnel matters, public relations, and compliance activities.

The Headquarters Marine Corps is currently evaluating various alternatives for caretaking responsibilities. Once the caretaking responsibilities have been identified, the BCT will meet with the designated representatives to coordinate closure and transfer activities.

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**Table 6-1**  
**Future Land Use Risk Assessment for Development of Remedy Selections**  
**(Sheet 1 of 4)**

Site ID	Risks	CONTAMINANTS <sup>1</sup>			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface Soil	Surface/Sediment <sup>2</sup>			
1 (OU-3A)	Refer to Appendix E	VOCs, Metals, Gross alpha/beta, GCP	Metals	VOCs, TFH, TRPH, GCP	EOD Range	Open space	TBD
2 (OU-2B)	Refer to Appendix E	Metals, Gross alpha/beta, VOCs, GCP	Metals, VOCs, Herbicides	Metals, VOCs, SVOCs, Herbicides, TFH, Pesticides and PCBs	Inactive landfill	Agricultural, open space	TBD
3 (OU-2C)	Refer to Appendix E	Metals, Gross alpha/beta, GCP, VOCs, SVOCs, Pesticides and PCBs	Metals, VOCs, Herbicides, TFH, SVOCs	Metals, VOCs, Pesticides, Herbicides, PCBs, TFH, Dioxins, GCP, SVOCs	Inactive landfill	Maintenance, supply/storage, housing, fuel storage	TBD
4 (OU-3B)	Refer to Appendix E	Metals, Gross alpha/beta, GCP, VOCs, TFH	Metals, TFH, TRPH	Metals, VOCs, Pesticides, Herbicides, PCBs, TFH, TRPH, GCP, SVOCs	Open area	Engine test cell	TBD
5 (OU-2C)	Refer to Appendix E	Metals, VOCs, Gross alpha/beta, GCP, VOCs	Metals, Herbicides	VOCs, Metals, Pesticides and PCBs, TFH, TRPH	Inactive landfill, RI-derived waste storage area	Golf course, agriculture, airfield operations	TBD
6 (OU-3A)	Refer to Appendix E	Metals, VOCs, SVOCs, GCP	Metals, VOCs	Metals, SVOCs, TFH, TRPH, VOCs	Open space, airfield operations	Airfield operations, agriculture	TBD
7 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, GCP, Gross alpha/beta	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH, Pesticides and PCBs	Open space, airfield operations	Airfield operations, supply/storage, maintenance	TBD

**Table 6-1**  
**Future Land Use Risk Assessment for Development of Remedy Selections**  
**(Sheet 2 of 4)**

Site ID	Risks	CONTAMINANTS <sup>1</sup>			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface Soil	Surface/Sediment <sup>2</sup>			
8 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, VOCs, SVOCs, Pesticides, PCBs, TFH, TRPH	Metals, VOCs, Pesticides, PCBs, TFH, TRPH, SVOCs	DRMO Storage Yard	Supply/storage, maintenance	TBD
9 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH, TRPH	Open space	Airfield operations, supply storage	TBD
10 (OU-3A)	Refer to Appendix E	Metals, SVOCs, VOCs, GCP	Metals, TFH	Metals, VOCs, SVOCs, TFH, TRPH	Aircraft parking (tarmac)	Airfield operations, supply storage, maintenance	TBD
11 (OU-3A)	Refer to Appendix E	Not investigated	Not investigated	Pesticides, PCBs	Storage area	Supply/storage, maintenance, administrative support	TBD
12 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, TFH, TRPH, SVOCs, Pesticides and PCBs	Metals, VOCs, SVOCs, Herbicides, TFH, TRPH, Pesticides and PCBs, GCP	Open space, contractor staging area	Airfield operations, supply/storage	TBD
13 (OU-3B)	Refer to Appendix E	Metals, VOCs, TFH, GCP	Metals, SVOCs, TFH	Metals, VOCs, SVOCs, TFH, TRPH, Pesticides, PCBs	Historic aircraft storage	Supply/storage, maintenance, fuel storage	TBD
14 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, TRPH	Metals, VOCs, SVOCs, TFH, TRPH	Open area	Supply/storage, maintenance, community support	TBD
15 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, GCP	Metals	Metals, VOCs, SVOCs, TFH, TRPH	Storage area	Administrative support, supply/storage	TBD

**Table 6-1**  
**Future Land Use Risk Assessment for Development of Remedy Selections**  
**(Sheet 3 of 4)**

Site ID	Risks	CONTAMINANTS <sup>1</sup>			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface Soil	Surface/Sediment <sup>2</sup>			
16 (OU-3A)	Refer to Appendix E	Metals, GCP	Metals, SVOCs, TFH, TRPH, VOCs	Metals, VOCs, SVOCs, TFH, TRPH	Open space	Airfield operations, crash crew training	TBD
17 (OU-2B)	Refer to Appendix E	Metals, VOCs, GCP	Metals, Herbicides, TFH, TRPH	Metals, VOCs, Herbicides, Pesticides, PCBs, TFH, TRPH, SVOCs	Inactive landfill	Agricultural, open space, housing	TBD
18 (OU-1)	Refer to Appendix E	VOCs			Not applicable	Not applicable	TBD
19 (OU-3A)	Refer to Appendix E	Metals, VOCs, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH, TRPH	Metals, VOCs, SVOCs, TFH TRPH	Unused	Airfield operations	TBD
20 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals	VOCs, SVOCs, TFH, TRPH, Pesticides and PCBs, Metals	Hobby shop	Community support	TBD
21 (OU-3A)	Refer to Appendix E	Metals, VOCs, GCP	Metals, Pesticides, TFH, PCBs	Metals, VOCs, SVOCs, Herbicides, TFH, Pesticides and PCBs	Material storage	Supply/storage	TBD
22 (OU-3A)	Refer to Appendix E	Metals, VOCs, TFH, Gross alpha/beta, GCP	Metals, VOCs, SVOCs, TFH	Metals, VOCs, SVOCs, Pesticides and PCBs, TFH, TRPH	Aircraft parking (tarmac/gravel)	Airfield operations, supply/storage, maintenance	TBD

**Table 6-1**  
**Future Land Use Risk Assessment for Development of Remedy Selections**  
**(Sheet 4 of 4)**

Site ID	Risks	CONTAMINANTS <sup>1</sup>			Current Use	Adjacent Use	Anticipated Use
		Groundwater	Subsurface Soil	Surface/Sediment <sup>2</sup>			
24 <sup>3</sup> (OU-2A)	Refer to Appendix E	VOCs	VOCs	VOCs	Airfield operations, supply/storage, maintenance, administrative support	Airfield operations, supply/storage, maintenance, administrative support	TBD
25 <sup>3</sup> (OU-2A)	Refer to Appendix E	VOCs, GCP, Metals, Pesticides, PCBs, TFH, SVOCs	VOCs, SVOCs, Metals, TFH, TRPH, Pesticides and PCBs	VOCs, Pesticides and PCBs, TFH, TRPH, SVOCs, Herbicides, Metals	Major surface water drainages	Various	TBD

Source:

Jacobs 1993b. MCAS El Toro, Phase II RI/FS Draft Work Plan.

Notes: <sup>1</sup> contaminants of potential concern (COPCs) identified in Phase II RI Work Plan; contaminants listed for all on-site soil/sediment COPCs and all on-site and downgradient groundwater COPCs

<sup>2</sup> corresponds to shallow soil/sediment definitions in Phase II RI Work Plan

<sup>3</sup> Sites 24 and 25 will be investigated during Phase II of the RI/FS

Abbreviations:

- COPCs for downgradient locations only
- EOD – explosive ordnance disposal
- GCP – general chemistry parameters
- OU – operable unit
- PCB – polychlorinated biphenyl
- RI – Remedial Investigation
- SVOC – semivolatile organic compound
- TBD – to be determined
- TFH – total fuel hydrocarbons
- TRPH – total recoverable petroleum hydrocarbons
- VOC – volatile organic compound

**Table 6-2**  
**Human Health Standards**  
**(Sheet 1 of 1)**

Contaminant	Concentration Level (mg/L)

**Human health standards for IRP sites have not been established.**  
**The standards will be determined during Phase II of the RI/FS.**

Abbreviations: mg/L – milligrams per liter  
IRP – Installation Restoration Plan  
RI/FS – Remedial Investigation/Feasibility Study



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**Table 6-3**  
**Surface Water Standards**  
**(Sheet 1 of 2)**

Constituent/Parameter	Concentration Limit (µg/L)/Criteria
<b>Organics</b>	
1,1,1-Trichloroethane	18,000 <sup>1</sup>
2-Butanone	NA
4,4'-DDE	0.001 <sup>2</sup>
4,4'-DDT	0.001 <sup>2</sup>
4-Nitrophenol	150 <sup>3,4</sup>
Acetone	NA
Benzyl butyl phthalate	3.0 <sup>3,5</sup>
Beta BHC	0.08 <sup>3,6</sup>
Bis(2-ethylhexyl)phthalate	360 <sup>7</sup>
Chlordane	0.0043 <sup>8</sup>
Chloroform	1,240 <sup>3</sup>
Delta BHC	0.08 <sup>3,6</sup>
Endosulfan sulfate	0.056 <sup>9</sup>
Methyl chloride	11,000 <sup>10</sup>
Methylene chloride	11,000 <sup>1,3,10</sup>
Total fuel hydrocarbons-diesel	NA
Toluene	17,500 <sup>1,3</sup>
<b>Inorganics</b>	
Aluminum	87
Antimony	30 <sup>7</sup>
Arsenic	190 <sup>11</sup>
Barium	NA
Beryllium	5.3 <sup>3</sup>
Cadmium	3.6/1.2/2.5 <sup>12</sup>
Chromium	694/212/474 <sup>11,12</sup>
Cobalt	NA
Copper	42/12/28 <sup>12</sup>
Lead	20.9/3.3/11.5 <sup>12</sup>
Manganese	NA
Mercury	0.012
Nickel	550/162/371 <sup>12</sup>
Selenium	5
Silver	0.12
Thallium	40 <sup>3</sup>
Vanadium	NA
Zinc	271/109/250 <sup>12</sup>

## Sources:

United States Environmental Protection Agency. 1992. Quality Criteria for Water.  
California State Water Resources Control Board. 1992. Amendments of the Water Quality  
Control Plan for Inland Surface Waters of California, Functional Equivalent Document.  
November.

**Table 6-3**  
**Surface Water Standards**  
**(Sheet 2 of 2)**

- Notes:
- <sup>1</sup> no chronic criterion was available; the value listed is the acute criterion
  - <sup>2</sup> criterion values for DDT refer to the sum of the p,p' and o,p' isomer of DDT, DDD, (TDE), and DDE
  - <sup>3</sup> data insufficient to develop criterion; value is lowest observed effect level
  - <sup>4</sup> value listed is the generic criterion for nitrophenols
  - <sup>5</sup> value listed is the generic criterion for phthalate esters
  - <sup>6</sup> value listed is for technical BHC
  - <sup>7</sup> proposed criterion
  - <sup>8</sup> criteria levels for chlordane refer to the sum of alpha chlordane, gamma chlordane, nonachlor-alpha, nonachlor-gamma, and oxychlordane; criteria are for 1-day average exposure
  - <sup>9</sup> value listed is for the sum of endosulfan-alpha, -beta, and endosulfan sulfate
  - <sup>10</sup> value listed is a generic criterion for halomethanes
  - <sup>11</sup> for the trivalent form
  - <sup>12</sup> calculation of these water quality criteria are based on three levels of water hardness. Site-specific hardness was estimated by summing calcium and magnesium concentrations to yield 438, 103, 275 mg/L as  $\text{CaCO}_3$  for Sites 2, 3, and 25, respectively. Sites 2, 3, and 25 comprise all the surface runoff collection channels that flow through or adjacent to the Station.

Abbreviation:  $\mu\text{g/L}$  – micrograms per liter  
NA – not applicable

## Chapter 7

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## **Appendix A**

# **Fiscal Year Funding Requirements**

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Costs associated with implementation of programs for environmental restoration of MCAS El Toro are being developed by U.S. COST, INC. Tables (A-1 through A-4) summarizing these costs will be inserted to this appendix when available. Table A-5 summarizes historical expenditures by site and operable unit funds. Cost data will be provided for the Installation Restoration Program, compliance program, and natural/cultural resources activities. In addition, a tabulation of total costs associated with these programs will be provided.



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**Table A-5**  
**Historical Expenditures by Site by Operable Unit Funds**  
**(Sheet 1 of 4)**

OU	Site	Site Description <sup>1</sup>	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	FY 1995 (\$000)	Total (\$000)
OU-1	18		PA	3.7			1.4								5.1
			SI			846.1	465.0	400.1							1711.2
			RI/FS					1.1	102.4	43.0	976.0	2000.0	922.4	792.2	4837.2
			RD									797.0	591.4		1388.4
			RA											1461.9	1461.9
OU-2A	24		PA												
			SI												
			RI/FS										3201.8	376.6	3578.4
	25		PA												
			SI												
			RI/FS										3201.8		3201.8
OU-2B	2		PA	3.7			2.3								6.0
			SI				7.4	38.6							46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	1420.7	4102.9
	17		PA	3.7			1.4								5.1
			SI				7.4	38.6							46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	17.0	2699.2

Appendix A

Fiscal Year Funding Requirements

**Table A-5**  
**Historical Expenditures by Site by Operable Unit Funds**  
**(Sheet 2 of 4)**

OU	Site	Site Description <sup>1</sup>	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	FY 1995 (\$000)	Total (\$000)
OU-2C	3		PA	3.7			1.4								5.1
			SI				7.4	38.6							46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	17.0	2699.2
	5		PA	3.7			1.4								5.1
			SI				7.4	38.6							46.0
			RI/FS					1.1	12.3	27.0	857.0	98.2	1686.6	17.0	2699.2
	10		PA	3.4			1.4								4.8
			SI												
			RI/FS					1.1	12.3	27.0	857.0	98.2	76.6	376.6	1448.8
OU-3A	1		PA	3.7			1.4								5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.7	1448.8
	6		PA	3.4			1.4								4.8
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
	7		PA	3.4			1.4								4.8
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
			RA											126.6	
	8		PA				1.4								1.4
			RI/FS					1.1	12.2	27.0	857.0	98.2	88.1	376.6	1460.2
	9		PA	3.7			1.4								5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7

Appendix A

Fiscal Year Funding Requirements

**Table A-5**  
**Historical Expenditures by Site by Operable Unit Funds**  
**(Sheet 3 of 4)**

OU	Site	Site Description <sup>1</sup>	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	FY 1995 (\$000)	Total (\$000)
OU-3A (cont.)	11		PA	3.7			1.4								5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
			RA											126.6	126.6
	12		PA				1.4								1.4
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
	14		PA	3.7			1.4								5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.7	1448.8
			RA											126.6	126.6
	15		PA	3.7			1.4								5.1
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
	16		PA				1.4								1.4
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
	19		PA				1.4								1.4
			SI				16.4								16.4
			RI/FS					1.1	13.0	27.0	857.0	98.2	76.6	376.6	1449.5
			RA											126.6	126.6
	20		RI/FS						13.0	27.0	857.0	98.2	76.6	376.6	1448.4
			RA											126.6	126.6
	21		RI/FS						13.0	27.0	857.0	98.2	76.6	376.6	1448.4
	22		RI/FS						13.0	27.0	857.0	98.2	76.6	376.6	1448.4
	23		SI							1.2	32.0	20.0			53.2

Appendix A

Fiscal Year Funding Requirements

**Table A-5  
Historical Expenditures by Site by Operable Unit Funds  
(Sheet 4 of 4)**

OU	Site	Site Description <sup>1</sup>	IRP Phases	FY 1985 (\$000)	FY 1986 (\$000)	FY 1987 (\$000)	FY 1988 (\$000)	FY 1989 (\$000)	FY 1990 (\$000)	FY 1991 (\$000)	FY 1992 (\$000)	FY 1993 (\$000)	FY 1994 (\$000)	FY 1995 (\$000)	Total (\$000)
OU-3B	4		PA				1.4								1.4
			SI				6.3								6.3
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.6	1448.7
			RA											126.6	126.6
	13		PA	3.4			1.4								4.8
			RI/FS					1.1	12.2	27.0	857.0	98.2	76.6	376.7	1448.8
			RA											126.6	126.6

Notes: <sup>1</sup> Refer to Chapter 4 for descriptions of the IRP sites

**Abbreviations:**

IRP – Installation Restoration Program  
 OU – operable unit  
 PA – Preliminary Assessment  
 RA - Remedial Action  
 RD – Remedial Design  
 RI/FS – Remedial Investigation/Feasibility Study  
 SI – Site Investigation

OU	Site	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
OU-1		PA		SI	HRS SI	SI RI	RI	RI	RI	RI FS	RI FS	RI FS
	18											
OU-2A											RI	RI
	24											
	25											
OU-2B		PA			HRS SI	SI RI	RI	RI	RI	RI	RI	RI
	2											
	17											
OU-2C		PA			HRS SI	SI RI	RI	RI	RI	RI	RI	RI
	3											
	5											
OU-3A		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	1											
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	6											
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	7											
	8											
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	9											

(figure continues)

**LEGEND:**

PA Preliminary Assessment  
 SI Site Inspection  
 RI Remedial Investigation  
 FS Feasibility Study  
 RA Remedial Action  
 HRS Hazard Ranking System  
 Scoring

Southwest Division  
 Naval Facilities Engineering Command  
 MCAS El Toro, CA

**Past Restoration Schedule**

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**Figure A-1**

Date  
 3/1/96

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OU	Sites	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
OU-3A (cont'd)		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	10	■			■	■	■	■	■	■	■	■
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	11	■			■	■	■	■	■	■	■	■
					HRS	RI	RI	RI	RI	RI	RI	RI
	12				■	■	■	■	■	■	■	■
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	14	■			■	■	■	■	■	■	■	■
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	15	■			■	■	■	■	■	■	■	■
					HRS	RI	RI	RI	RI	RI	RI	RI
	16				■	■	■	■	■	■	■	■
					HRS SI	RI	RI	RI	RI	RI	RI	RI
	19				■ ■	■	■	■	■	■	■	■
							RI	RI	RI	RI	RI	RI
	20						■	■	■	■	■	■
							RI	RI	RI	RI	RI	RI
	21						■	■	■	■	■	■
							RI	RI	RI	RI	RI	RI
	22						■	■	■	■	■	■
OU-3B					HRS SI	RI	RI	RI	RI	RI	RI	RI
	4				■ ■	■	■	■	■	■	■	■
		PA			HRS	RI	RI	RI	RI	RI	RI	RI
	13	■			■	■	■	■	■	■	■	■

**LEGEND:**

PA Preliminary Assessment  
 SI Site Inspection  
 RI Remedial Investigation  
 FS Feasibility Study  
 RA Remedial Action  
 HRS Hazard Ranking System  
 Scoring

Southwest Division		
Naval Facilities Engineering Command		
MCAS El Toro, CA		
<b>Past Restoration Schedule</b>		
File No.	<b>Figure A-1</b>	Date
103figa1.ppt	<b>(continued)</b>	3/1/96



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## Appendix B

# Installation Environmental Restoration Documents Summary Tables

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This appendix provides listings of previous environmental restoration program deliverables by program and by site. Table B-1 presents project deliverables and Table B-2 presents site deliverables. Table B-3 summarizes the status of technical documents and data loading. There is currently no information available for Table B-3.

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**Table B-1**  
**Project Deliverables**  
**(Sheet 1 of 5)**

Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1986	PA	Initial Assessment Study for MCAS El Toro, CA	1	1 through 17	May 1986 - Brown and Caldwell Engineers
1988	SI	Site Inspection Plan of Action, Installation Restoration Program, MCAS Tustin and El Toro, CA	2	1 through 19	August 1988 - James M. Montgomery Engineers
1989	SI	Perimeter Investigation Interim Report, MCAS El Toro, Installation Restoration Program	3	18	April 1989 - James M. Montgomery Engineers
February 1990 - MCAS El Toro Placed on National Priorities List					
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, CA, Communications Station Landfill Inactive Disposal Site	4	17	October 1990a - James M. Montgomery Engineers
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, CA, Perimeter Road Landfill Inactive Disposal Site	5	5	October 1990b - James M. Montgomery Engineers
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, CA, Magazine Road Landfill Inactive Disposal Site	6	2	October 1990c - James M. Montgomery Engineers
1990	SI	Solid Waste Air Quality Assessment Test Report, MCAS El Toro, CA, Original Landfill Inactive Disposal Site	7	3	October 1990d - James M. Montgomery Engineers
1991	FS	Groundwater Model Simulations to Investigate Well Field Scenarios for the Irvine Desalter Project	8	18	April 1991 - Orange County Water District

**Table B-1  
Project Deliverables  
(Sheet 2 of 5)**

Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1993	PA/SI	Final RCRA Facility Assessment Report, MCAS El Toro, CA	9	3, 12 <sup>1</sup>	July 1993 - Jacobs Engineering Group Inc. (CLEAN I)
1993	RI	MCAS El Toro Phase I RI Technical Memorandum	10	1 through 17, 19 through 22	May 1993 - Jacobs Engineering Group Inc. (CLEAN I)
1994	RI	MCAS El Toro Soil Gas Survey Technical Memorandum Sites 24 and 25	11	24, 25	October 1994 - Jacobs Engineering Group Inc. (CLEAN I)
1995	RI	Submittal of Final Health and Safety Plan Supplement Phase II RI/FS and Final Health and Safety Plan Comments for MCAS El Toro, CA	12	1 through 17, 19 through 22, 24, 25	March 1995 - BNI (CLEAN II)
1995	RI	Final Data Management Plan for MCAS El Toro, CA	13	1 through 17, 19 through 22, 24, 25	April 1995 - BNI (CLEAN II)
1995	RI	Final Site Assessment Report, Former Underground Storage Tank, Site 66A, MCAS El Toro, CA	14	various	July 1995 - BNI (CLEAN II)
1995	RI	Final Investigation-Derived Waste Management Plan, MCAS El Toro, CA	15	1 through 17, 19 through 22, 24, 25	July 1995 - BNI (CLEAN II)
1995	RI	Final Quality Assurance Project, Phase II Remediation Investigation/Feasibility Study, MCAS El Toro, CA	16	1 through 17, 19 through 22, 24, 25	July 1995 - BNI (CLEAN II)
1995	RI	Final Work Plan, Phase II RI/FS, MCAS El Toro, CA	17	1 through 17, 19 through 22, 24, 25	August 1995 - BNI (CLEAN II)

**Table B-1**  
**Project Deliverables**  
**(Sheet 3 of 5)**

Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1995	RI	Final Field Sampling Plan, Phase II RI/FS, MCAS El Toro, CA	18	1 through 17, 19 through 22, 24, 25	August 1995 - BNI (CLEAN II)
1995	RI	Final Work Plan/Field Sampling Plan Underground Storage Tank Site Assessment	19	various	May 1995 - BNI (CLEAN II)
1995	RI	Final Site Assessment Report, Former Underground Storage Tank, Site 66A, MCAS El Toro, CA	20	various	July 1995 - BNI (CLEAN II)
1995	RI	Final Risk Assessment Work Plan for CTO-0059	21	1 through 17, 19 through 22, 24, 25	September 1995 - BNI (CLEAN II)
1995	RI	Draft Final EE/CA <sup>2</sup> for Site 4 - Ferrocene Spill Area, MCAS El Toro	22	4	September 1995 - BNI (CLEAN II)
1995	RI	Draft Final EE/CA for Site 11 - Former Transformer Storage Area, MCAS El Toro	23	11	September 1995 - BNI (CLEAN II)
1995	RI	Draft Final EE/CA for Site 13 - Former Oil Change Area, MCAS El Toro	24	13	September 1995 - BNI (CLEAN II)
1995	RI	Draft Final EE/CA for Site 14 - Battery Acid Disposal Area, MCAS El Toro	25	14	September 1995 - BNI (CLEAN II)
1995	RI	Draft Final EE/CA for Unit 2 of Site 19 - Aircraft Expeditionary Refueling Site, MCAS El Toro	26	19	September 1995 - BNI (CLEAN II)
1995	RI	Draft Final EE/CA for Site 20 - Hobby Shop, MCAS El Toro	27	20	September 1995 - BNI (CLEAN II)

**Table B-1  
Project Deliverables  
(Sheet 4 of 5)**

Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1995	RI	Draft <sup>3</sup> Site Assessment Report, Former Underground Storage Tank, Site 66A, MCAS El Toro, CA	28	various	September 1995 - BNI (CLEAN II) BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 94, MCAS El Toro, CA	29	various	September 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 372B, MCAS El Toro, CA	30	various	September 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 443, MCAS El Toro, CA	31	various	September 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 126, MCAS El Toro, CA	32	various	November 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 364A, MCAS El Toro, CA	33	various	November 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 366, MCAS El Toro, CA	34	various	November 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 367, MCAS El Toro, CA	35	various	November 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 451, MCAS El Toro, CA	36	various	November 1995 - BNI (CLEAN II)

**Table B-1**  
**Project Deliverables**  
**(Sheet 5 of 5)**

Year	Phase	Project Title	Report No.	Sites Examined	Deliverable Date/Author
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Site 75B, MCAS El Toro, CA	37	various	December 1995 - BNI (CLEAN II)
1995	RI	Draft Site Assessment Report, Former Underground Storage Tank, Sites 553 and 554, MCAS El Toro, CA	38	various	December 1995 - BNI (CLEAN II)
1995	RI	Draft Final Updated Community Relations Plan	39	All	December 1995 - BNI (CLEAN II)
1995	RI	Final Addendum to the RCRA Facility Assessment, MCAS El Toro, CA	40	various	November 1995 - BNI (CLEAN II)
1995	RI	Final Work Plan Anthropogenic PAH Reference Level Study, MCAS El Toro, CA	41	various	November 1995 - BNI (CLEAN II)

Notes: <sup>1</sup> three solid waste management units/areas of concern (SWMUs/AOCs) were added to the Installation Restoration Program based on the RCRA Facility Assessment sampling results: SWMUs/AOCs 194 (Former Incinerator) and 300 (Solvent Spill Area) were included in Site 3; SWMU/AOC 90 (Former Sewage Treatment Plant) was included in Site 12 (refer to Draft Phase II RI Work Plan) (Jacobs Engineering 1993b)  
<sup>2</sup> draft final EE/CAs may be accepted as final documents pending approval from the Department of the Navy (DON) and agencies  
<sup>3</sup> draft Site Assessment Reports for former underground storage tanks have been accepted as final documents from the DON and agencies

Abbreviations: CLEAN – Comprehensive Long-Term Environmental Action Navy  
FS – Feasibility Study  
PA – Preliminary Assessment  
RCRA – Resource Conservation and Recovery Act  
RI – Remedial Investigation  
SI – Site Investigation



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**Table B-2**  
**Site Deliverables<sup>1</sup>**  
**(Sheet 1 of 1)**

Site No.	PA/SI	RI/FS	Close Out	IRA	LTM	NFRAP
1	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
2	1, 2, 6	10, 12, 13, 15, 16, 17, 18, 21, 39				
3	1, 2, 7, 9	10, 12, 13, 15, 16, 17, 18, 21, 39				
4	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 22, 39				
5	1, 2, 5	10, 12, 13, 15, 16, 17, 18, 21, 39				
6	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
7	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
8	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
9	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
10	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
11	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 23, 39				
12	1, 2, 9	10, 12, 13, 15, 16, 17, 18, 21, 39				
13	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 24, 39				
14	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 25, 39				
15	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
16	1, 2	10, 12, 13, 15, 16, 17, 18, 21, 39				
17	1, 2, 4	10, 12, 13, 15, 16, 17, 18, 21, 39				
18	2, 3	8				
19	2	10, 12, 13, 15, 16, 17, 18, 21, 26, 39				
20	<sup>-2</sup>	10, 12, 13, 15, 16, 17, 18, 21, 27, 39				
21	<sup>-2</sup>	10, 12, 13, 15, 16, 17, 18, 21, 39				
22	<sup>-2</sup>	10, 12, 13, 15, 16, 17, 18, 21, 39				
23	9					
24	<sup>-2</sup>	11, 12, 13, 15, 16, 17, 18, 21, 39				
25	<sup>-2</sup>	10 <sup>3</sup> , 11, 12, 13, 15, 16, 17, 18, 21, 39				

Notes: <sup>1</sup> The deliverable numbers in this table correspond to the report numbers in Table B-1

<sup>2</sup> PA/SI was not performed for Sites 20, 21, 22, 24, and 25

<sup>3</sup> Site 25 (Station Washes) was evaluated as part of Site 18 (Regional Groundwater) Investigation in the Phase I RI (Jacobs 1993a)

Abbreviations: IRA – Interim Remedial Action

LTM – Long-term Monitoring

NFRAP – No Further Response Action Planned

PA/SI – Preliminary Assessment/Site Investigation

RI/FS – Remedial Investigation/Feasibility Study

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**Table B-3**  
**Technical Documents/Data Loading Status Summary**  
**(Sheet 1 of 1)**

<b>Date</b>	<b>IRP Title</b>	<b>Site/ Operable Unit</b>	<b>Contractor</b>	<b>Service Center</b>	<b>Database Status<sup>1</sup></b>

**Information will be input to Table B-3 when a master database for MCAS El Toro IRP information is established. This table will be regularly updated based on current data loading activities and status.**

Notes: <sup>1</sup> At this time, the software to be used for the master database for MCAS El Toro is not known.

Abbreviations: IRP – Installation Restoration Program

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## **Appendix C**

### **Decision Document/Rod Summaries**

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The purpose of Appendix C is to provide documentation of records of decision (RODs) for the Installation Restoration Program (IRP) sites at MCAS El Toro. As of January 1996, no RODs have been prepared for the IRP sites at MCAS El Toro. As RODs are prepared for sites at the Station, documentation will be included in this appendix.

It is anticipated that an interim ROD for OU-1 (Site 18 - Regional Groundwater Investigation) will be completed by 30 May 1996. At that time, an abstract of the ROD should be added to this appendix.

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## **Appendix D**

# **No Further Response Action Summaries**

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The purpose of Appendix D is to provide documentation of no further response action decisions for the Installation Restoration Program (IRP) sites at MCAS El Toro. As of January 1996, one no further investigation determination was made for IRP Site 4 (Unit 1). As additional determinations are made for sites at the Station, documentation will be included in this appendix.



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## **Appendix E**

# **Conceptual Site Models**

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This appendix presents current conceptual site models developed for IRP sites in the Phase II RI/FS Work Plan for MCAS El Toro. Conceptual site models show relationships between potential sources, exposure pathways, and receptors. These are conceptual site models for Sites 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 19, 20, 21, 22, 24, and 25. For each site, there are three figures which show the site plan, the conceptual site model, and exposure routes and receptors. Table E-1, which would present a summary of conceptual site model data, will be included as information becomes available. Tables E-2a and E-2b present results of background statistical analyses for metals and pesticides/herbicides, respectively. As new information on IRP sites becomes available, conceptual site model information may be replaced or supplemented.

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**Table E-2a**  
**Results of Background Statistical Analysis – Metals**  
**(Sheet 1 of 1)**

<b>Parameter</b>	<b>Number of Stations</b>	<b>Arithmetic Mean [mg/kg]</b>	<b>Estimated Mean [mg/kg]</b>	<b>Coefficient of Variance</b>	<b>99th Percentile 50% Confidence</b>
Silver	11	.3	.3	.30	.55
Aluminum	11	7212.0	7307.1	.53	25396.26
Arsenic	11	1.9	2.3	2.18	37.61
Barium	11	69.6	70.4	.60	281.01
Beryllium	11	.3	.3	.55	1.20
Calcium	11	8651.6	6645.9	1.28	62164.12
Cadmium	11	1.6	1.5	2.09	23.11
Cobalt	11	3.2	3.6	1.19	31.02
Chromium	11	11.1	11.6	1.45	124.81
Copper	11	7.7	7.9	1.41	82.91
Iron	11	8404.3	8881.8	.88	54001.66
Mercury	11	.1	.1	1.01	.37
Potassium	11	2150.2	2258.5	.92	14399.89
Magnesium	11	3359.5	3377.4	.78	18014.29
Manganese	11	170.4	181.8	.89	1114.98
Sodium	11	228.3	228.8	.38	592.31
Nickel	11	13.1	13.0	2.00	193.61
Lead	11	6.0	6.3	.71	29.91
Antimony	11	1.4	1.4	.26	2.81
Selenium	11	.1	.1	.69	.48
Thallium	11	.2	.2	.53	.60
Vanadium	11	30.4	30.8	1.27	285.55
Zinc	11	31.9	32.3	.81	179.47

Abbreviations: mg/kg – milligrams per kilogram

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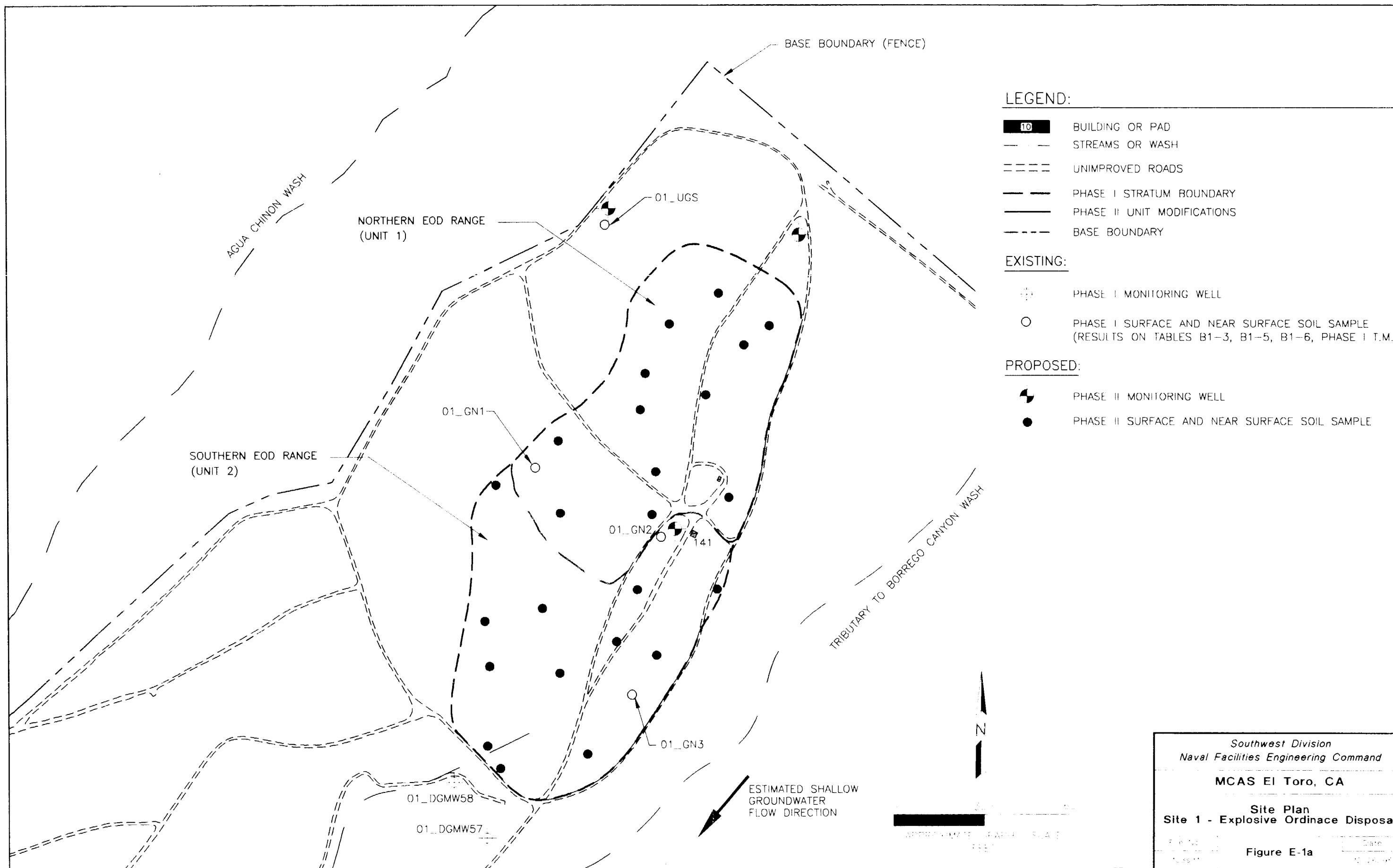
**Table E-2b**  
**Results of Background Statistical Analysis – Pesticides/Herbicides**  
**(Sheet 1 of 2)**

Parameter	Number of Stations	Arithmetic Mean	Estimated Mean	Coefficient of Variance	99th Percentile 50% Confidence
<b>Herbicides (µg/kg)</b>					
2,4 Dichlorophenoxy Acetic Acid	21	58.4	58.4	.04	64.47
2,4,5-T	21	14.6	14.6	.04	16.13
2,4-DB	21	29.9	29.9	.10	38.27
Dicamba	21	29.2	29.2	.04	32.25
MCPA	21	15986.3	15812.0	.25	28808.83
Dalapon	21	29.2	29.2	.04	32.25
Dinoseb	21	14.6	14.6	.04	16.13
MCPPP	21	14601.2	14601.6	.04	16127.24
Dichloroprop	21	60.4	60.4	.12	81.44
2,3,5-TP (Silvex)	21	14.6	14.6	.04	16.13
<b>Pesticides (µg/kg)</b>					
Aldrin	21	1.0	1.0	.04	1.09
BHC-Alpha	21	1.0	1.0	.04	1.09
BHC-Beta	21	1.0	1.0	.04	1.09
BHC-Delta	21	1.0	1.0	.04	1.09
BHC-Gamma (Lindane)	21	1.0	1.0	.04	1.09
Alpha-Chlordane	21	1.2	1.2	.40	2.94
Gamma-Chlordane	21	1.3	1.2	.42	3.19
4,4'-DDD	21	5.5	4.5	1.12	29.37
4,4'-DDE	21	20.1	12.5	2.84	177.29
4,4-DDT	21	23.7	16.3	3.20	248.37
Dieldrin	21	7.2	4.2	1.21	29.42
Endrin Aldehyde	21	2.9	2.5	.57	8.31
Endrin Ketone	21	1.9	1.9	.04	2.13
Endrin	21	2.3	2.2	.38	5.34
Endosulfane Sulfate	21	2.0	2.0	.15	2.95
Endosulfane I	21	1.0	1.0	.42	2.51
Endosulfane II	21	2.1	2.1	.27	3.96
Heptachlor Epoxide	21	1.0	1.0	.04	1.09
Heptachlor	21	1.0	1.0	.04	1.09
Methoxychlor	21	10.4	10.4	.11	13.67
PCB-1016	21	19.4	19.4	.04	21.27
PCB-1221	21	39.4	39.4	.04	43.19
PCB-1232	21	19.4	19.4	.04	21.27

**Table E-2b**  
**Results of Background Statistical Analysis – Pesticides/Herbicides**  
**(Sheet 2 of 2)**

<b>Parameter</b>	<b>Number of Stations</b>	<b>Arithmetic Mean</b>	<b>Estimated Mean</b>	<b>Coefficient of Variance</b>	<b>99th Percentile 50% Confidence</b>
PCB-1242	21	19.4	19.4	.04	21.27
PCB-1248	21	19.4	19.4	.04	21.27
PCB-1254	21	19.4	19.4	.04	21.27
PCB-1260	21	19.4	19.4	.04	21.27
Toxaphene	21	99.9	99.9	.04	109.49

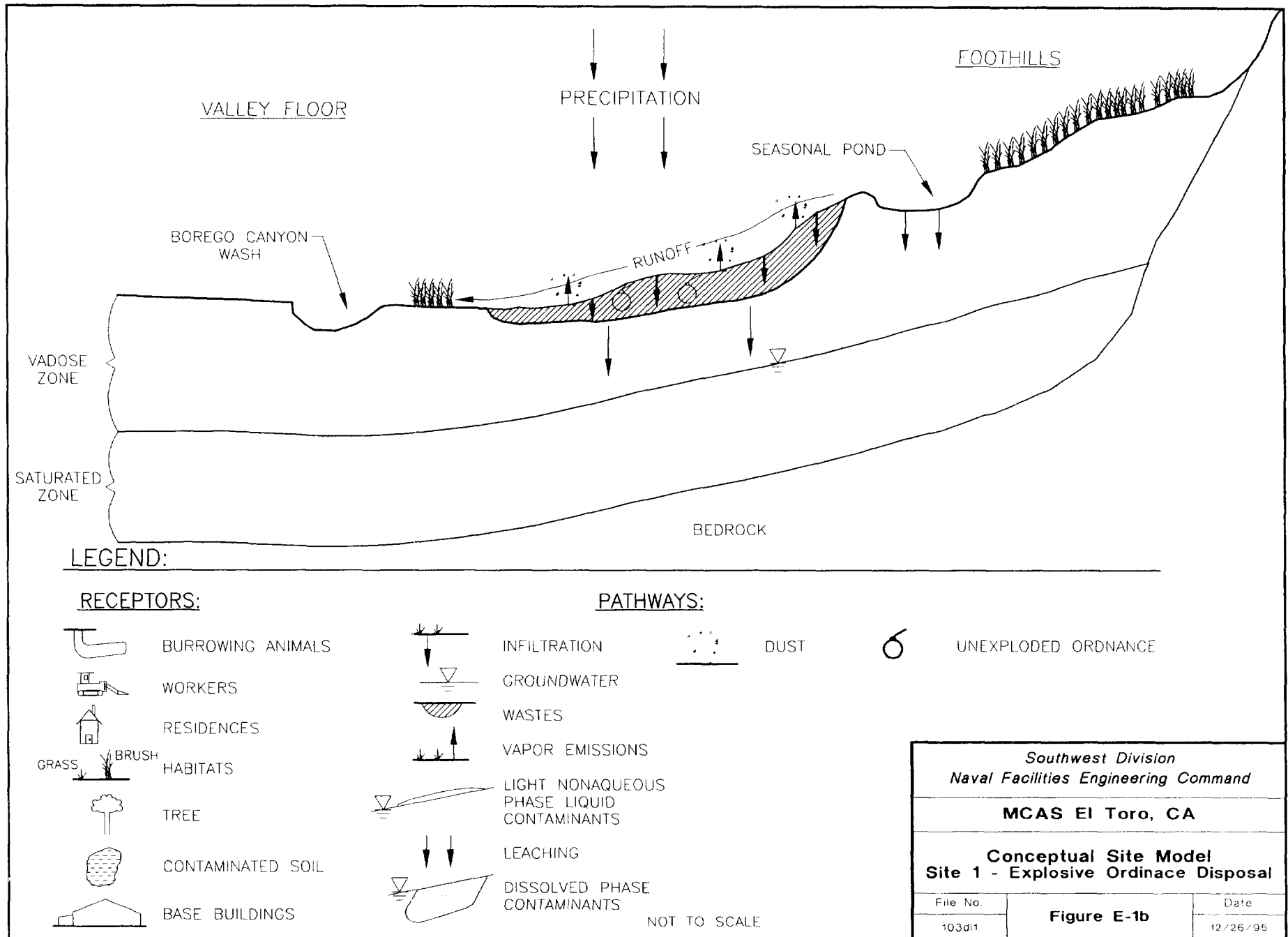
Abbreviations: PCB – polychlorinated biphenyl  
μg/kg – micrograms per kilogram



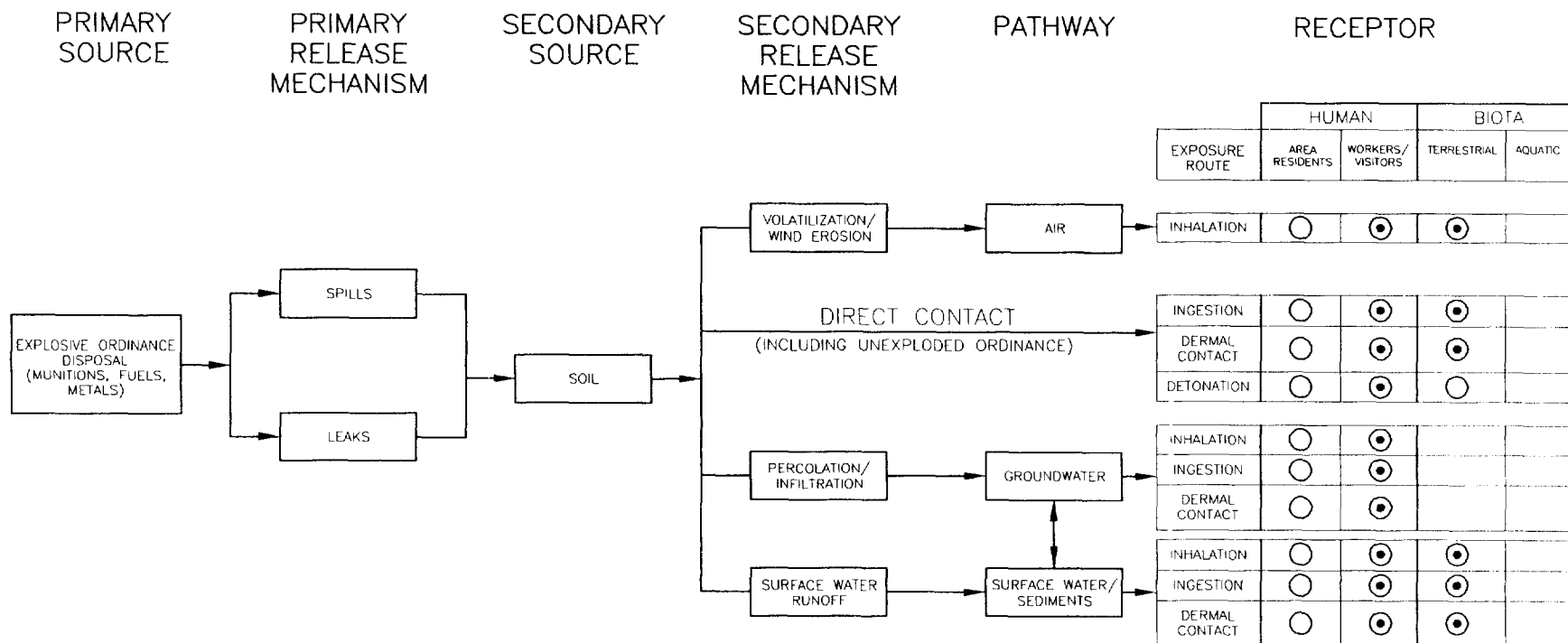


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 1 - Explosive Ordnance Disposal

File No.

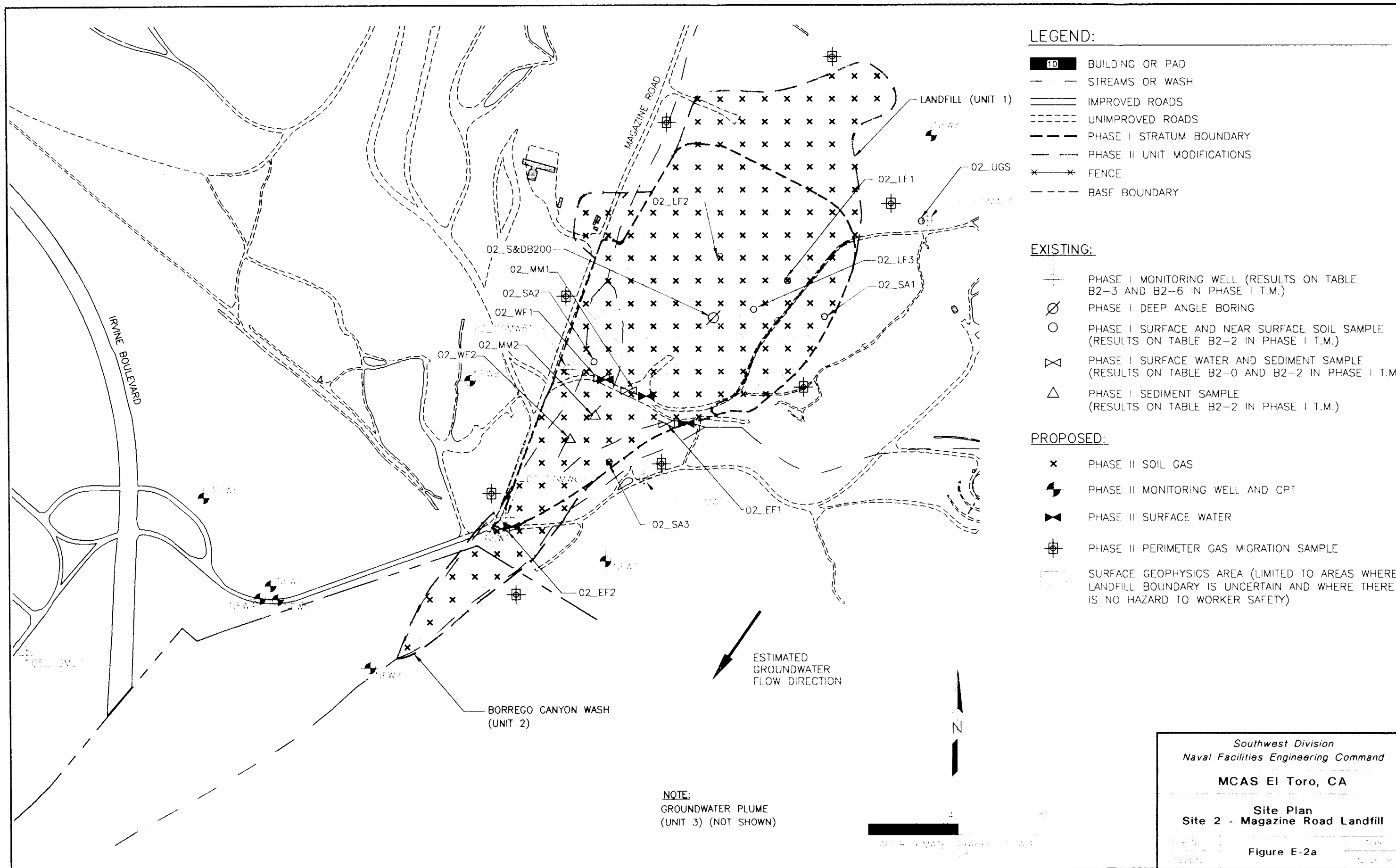
103mod1

Figure E-1c

Date

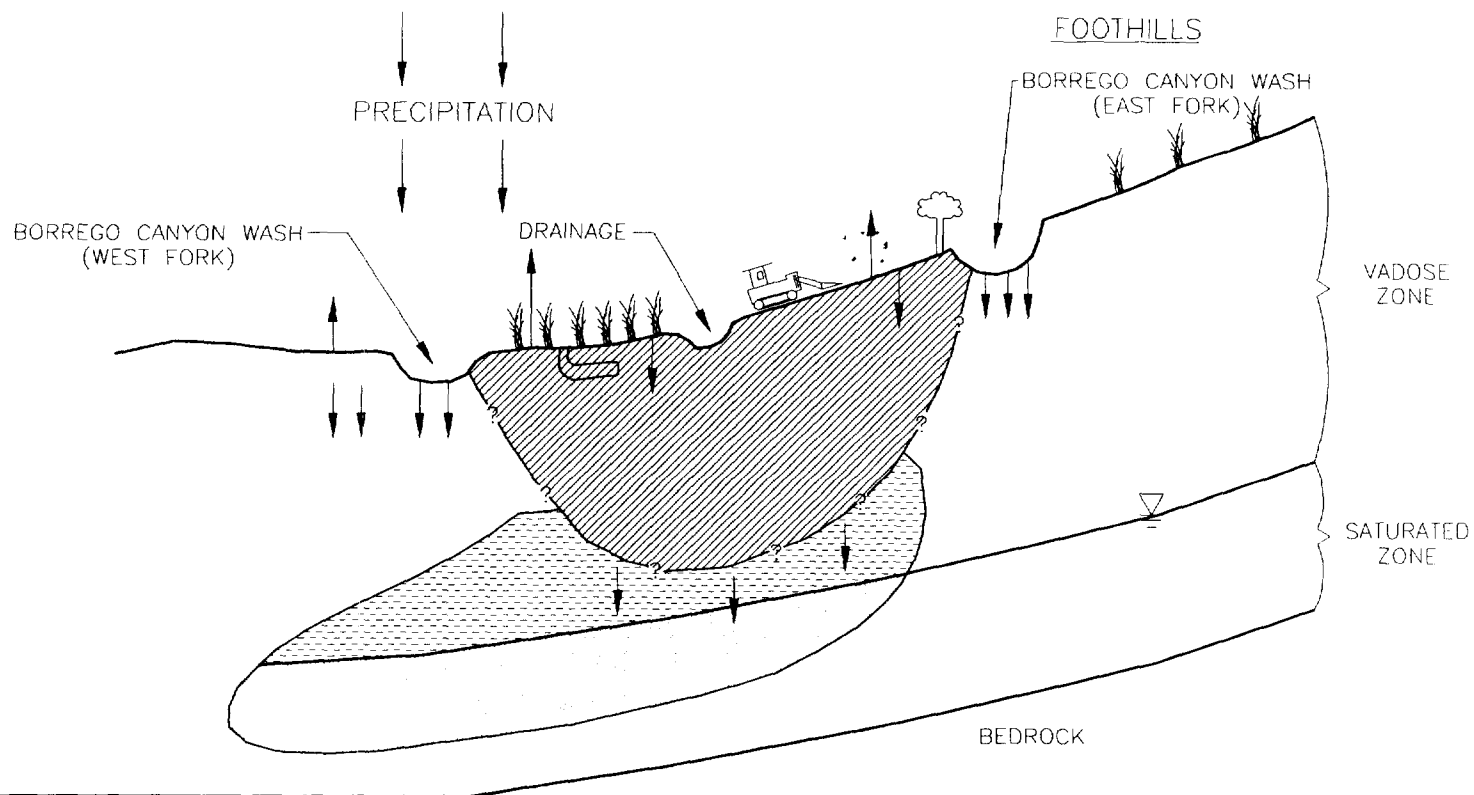
12/26/95

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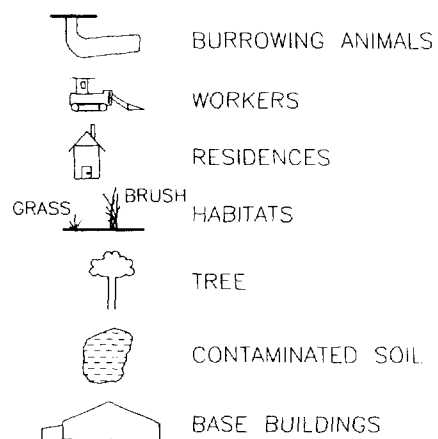
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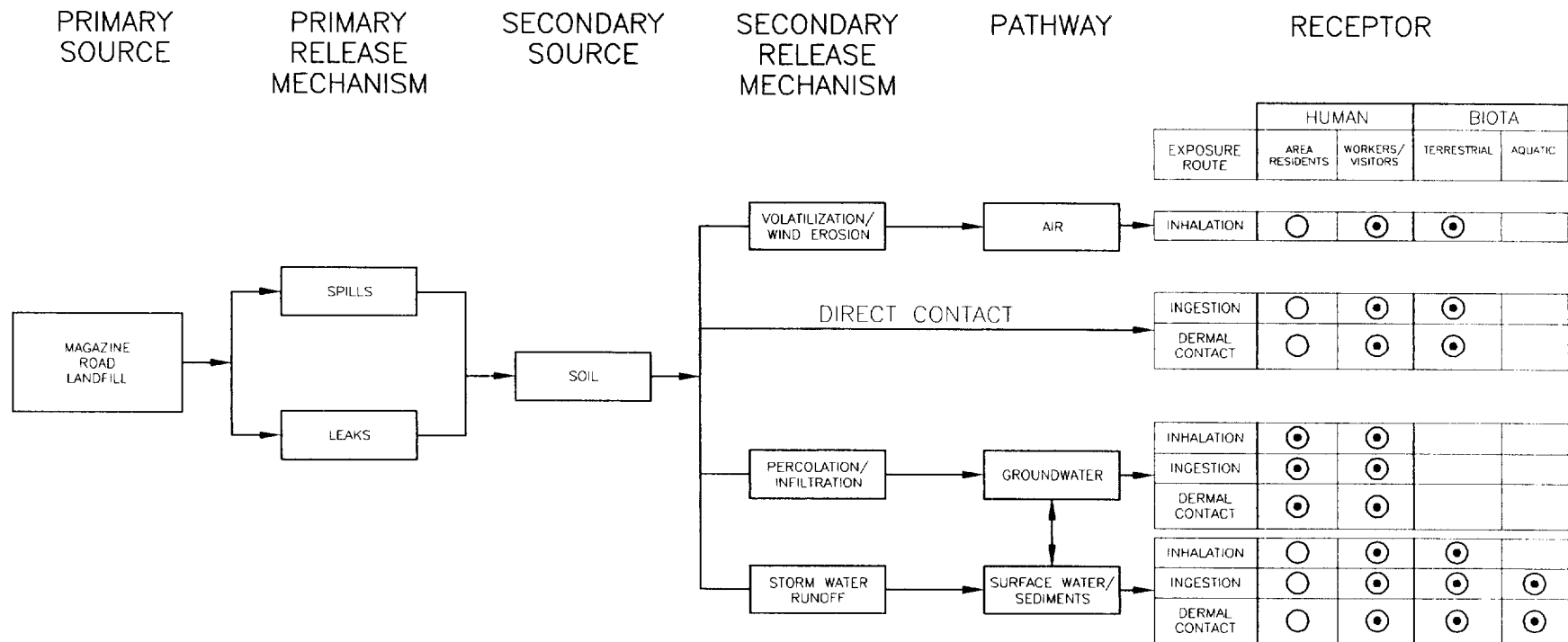
#### PATHWAYS:



Southwest Division Naval Facilities Engineering Command		
MCAS El Toro, CA		
Conceptual Site Model Site 2 - Magazine Road Landfill		
File No.	Figure E-2b	Date
103d12		12/26/95



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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

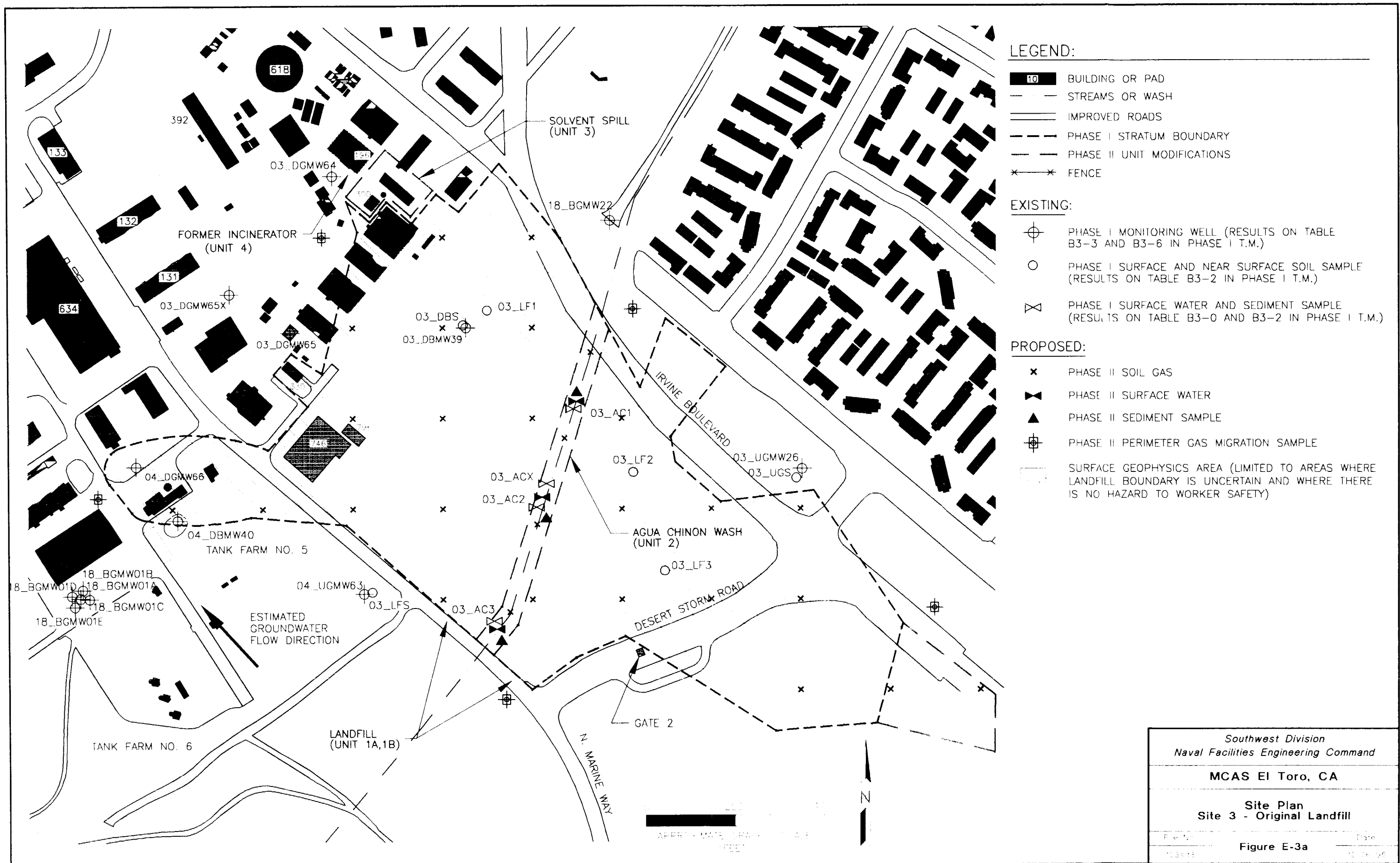
Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 2 - Magazine Road Landfill

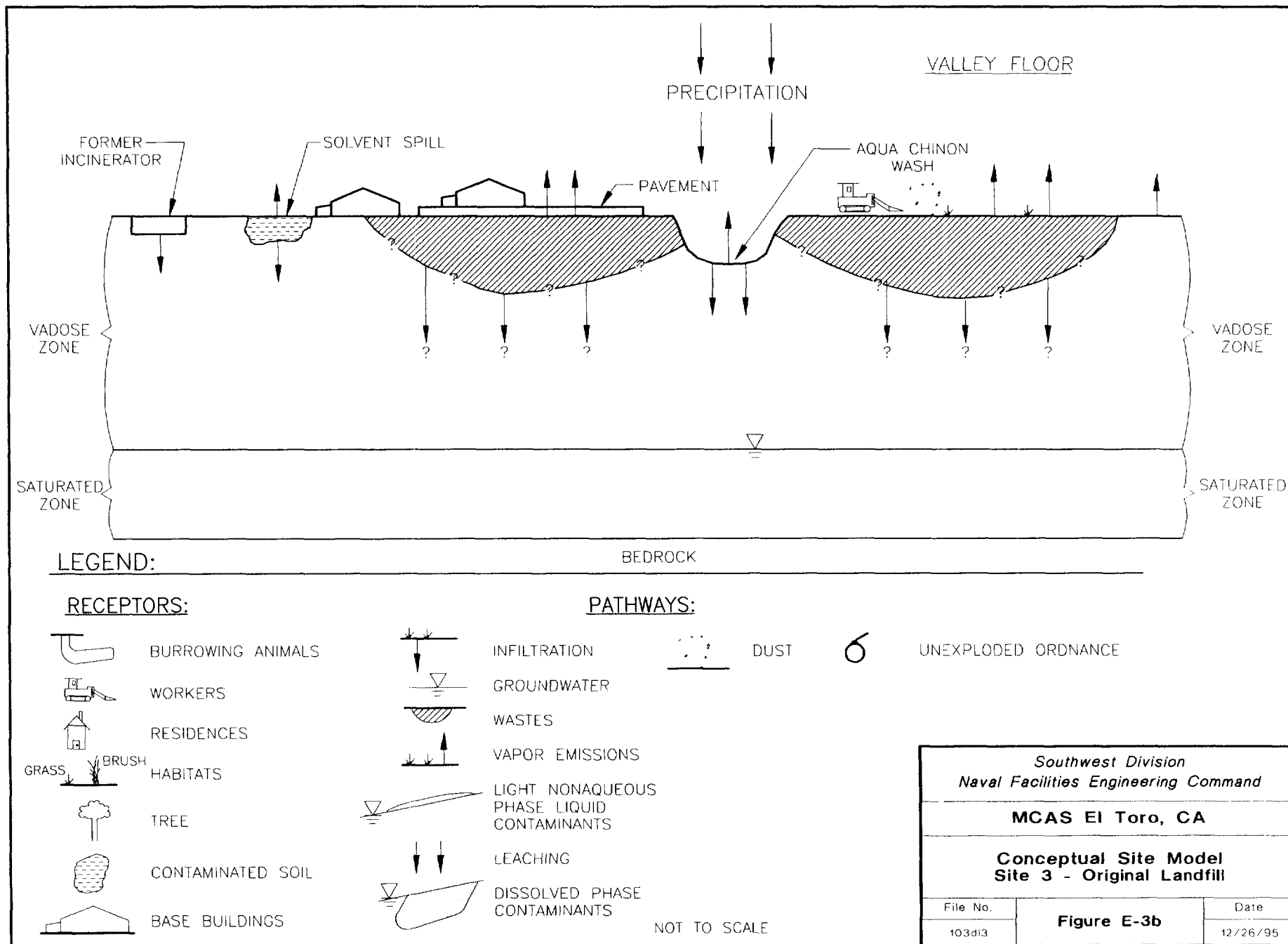
File No.	Figure E-2c	Date
103mod2		12/26/95

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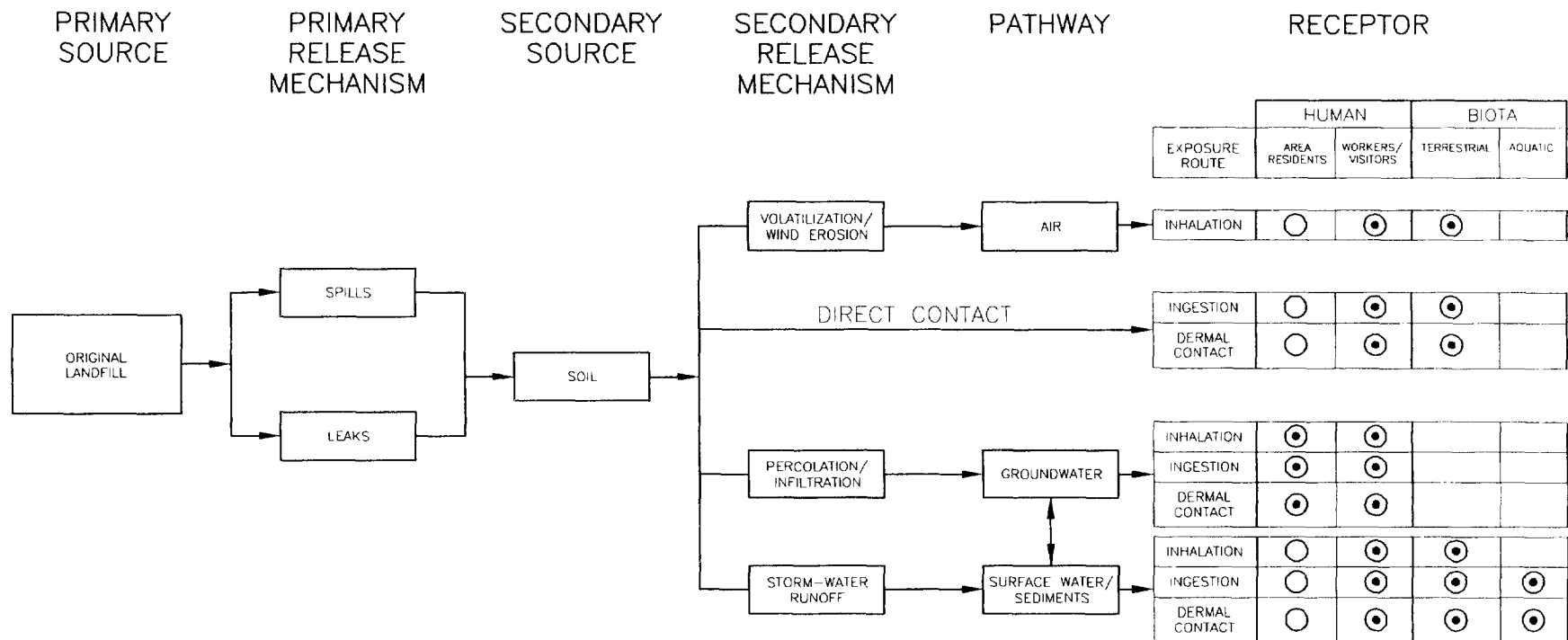


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR  
○ FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

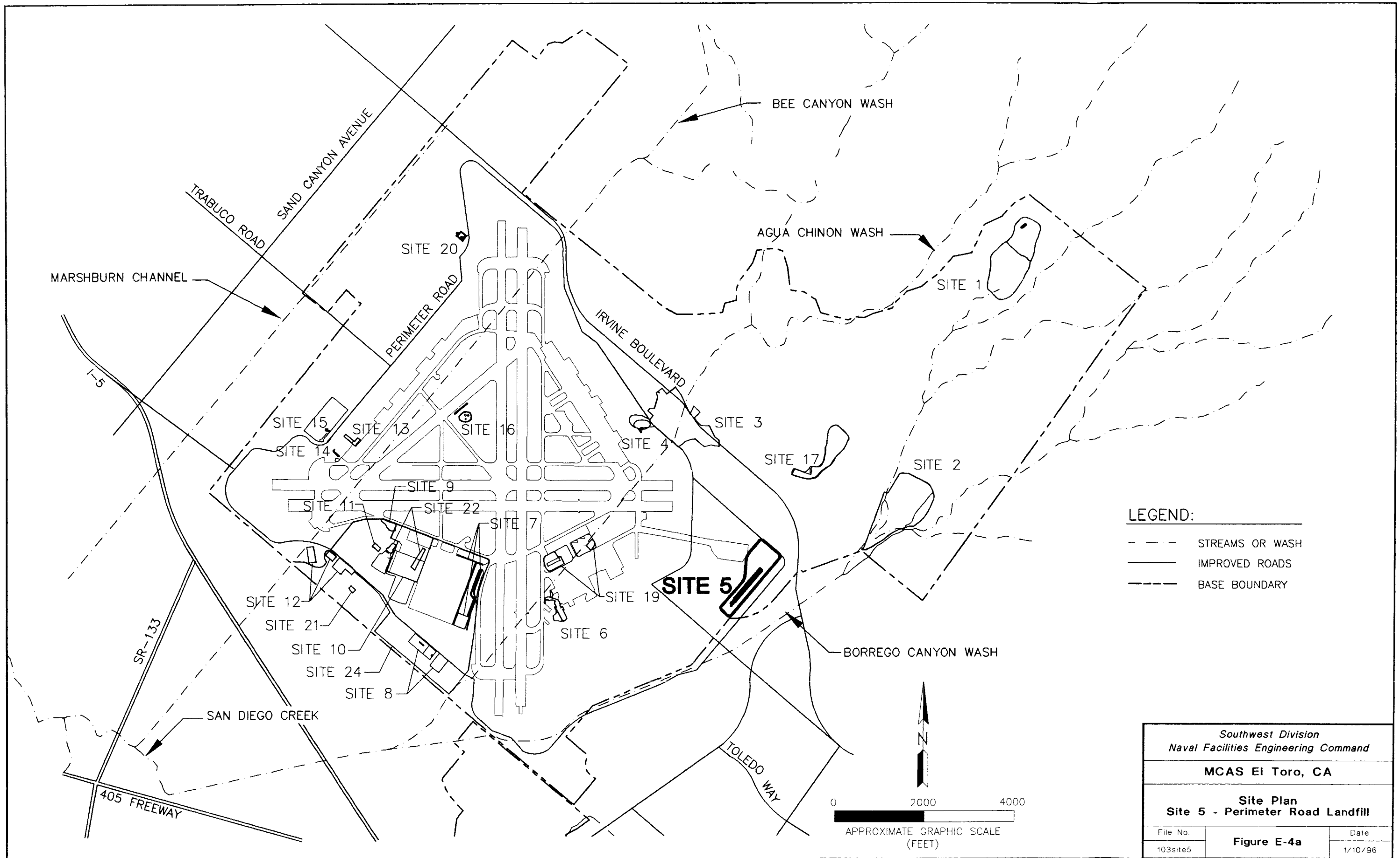
MCAS El Toro, CA

Exposure Routes and Receptors  
Site 3 - Original Landfill

File No.	Figure E-3c	Date
103mod3		12/28/95



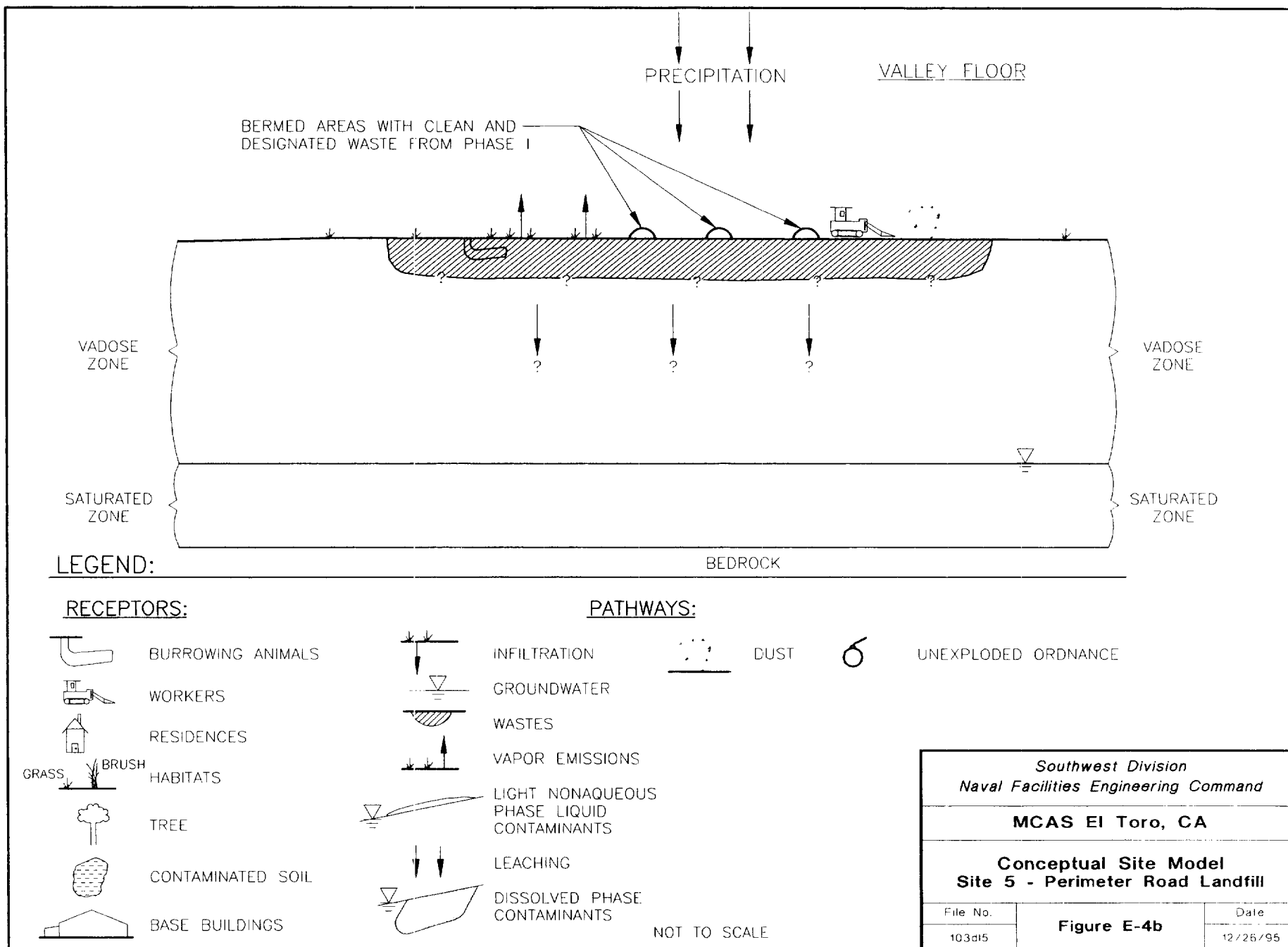
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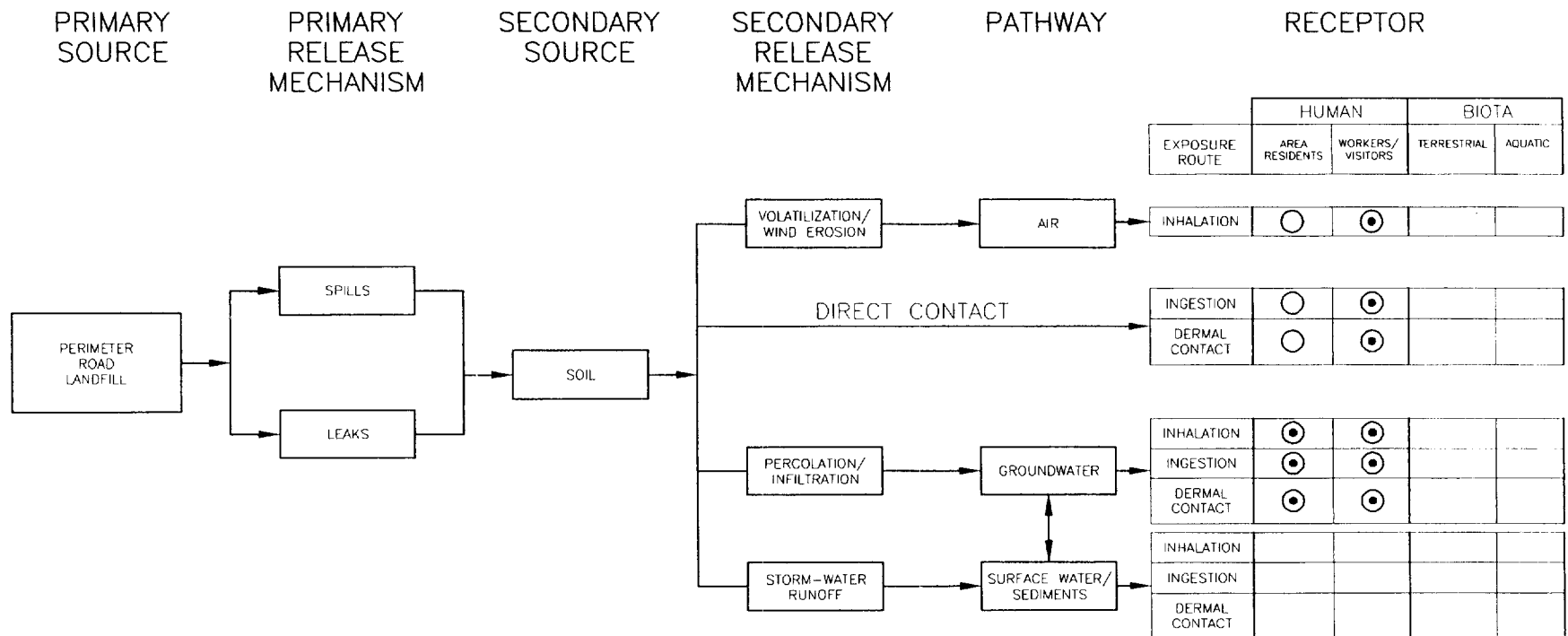
Southwest Division Naval Facilities Engineering Command		
MCAS El Toro, CA		
Site Plan Site 5 - Perimeter Road Landfill		
File No.	Figure E-4a	Date
103site5		1/10/96

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**LEGEND:**

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

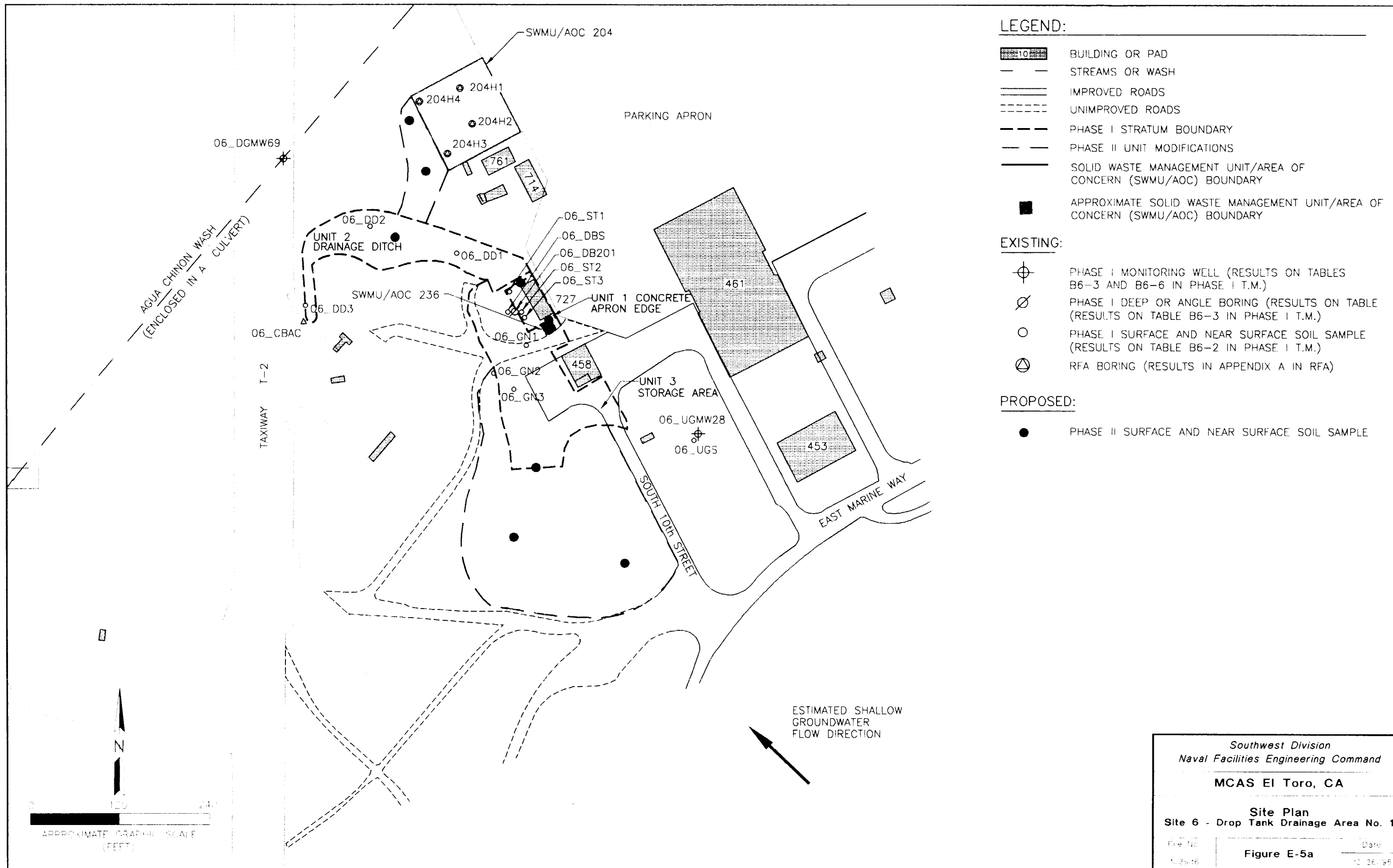
Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 5 - Perimeter Road Landfill

File No.	Figure E-4c	Date
103mod5		12/26/95

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Southwest Division  
Naval Facilities Engineering Command  
MCAS El Toro, CA

Site Plan  
Site 6 - Drop Tank Drainage Area No. 1

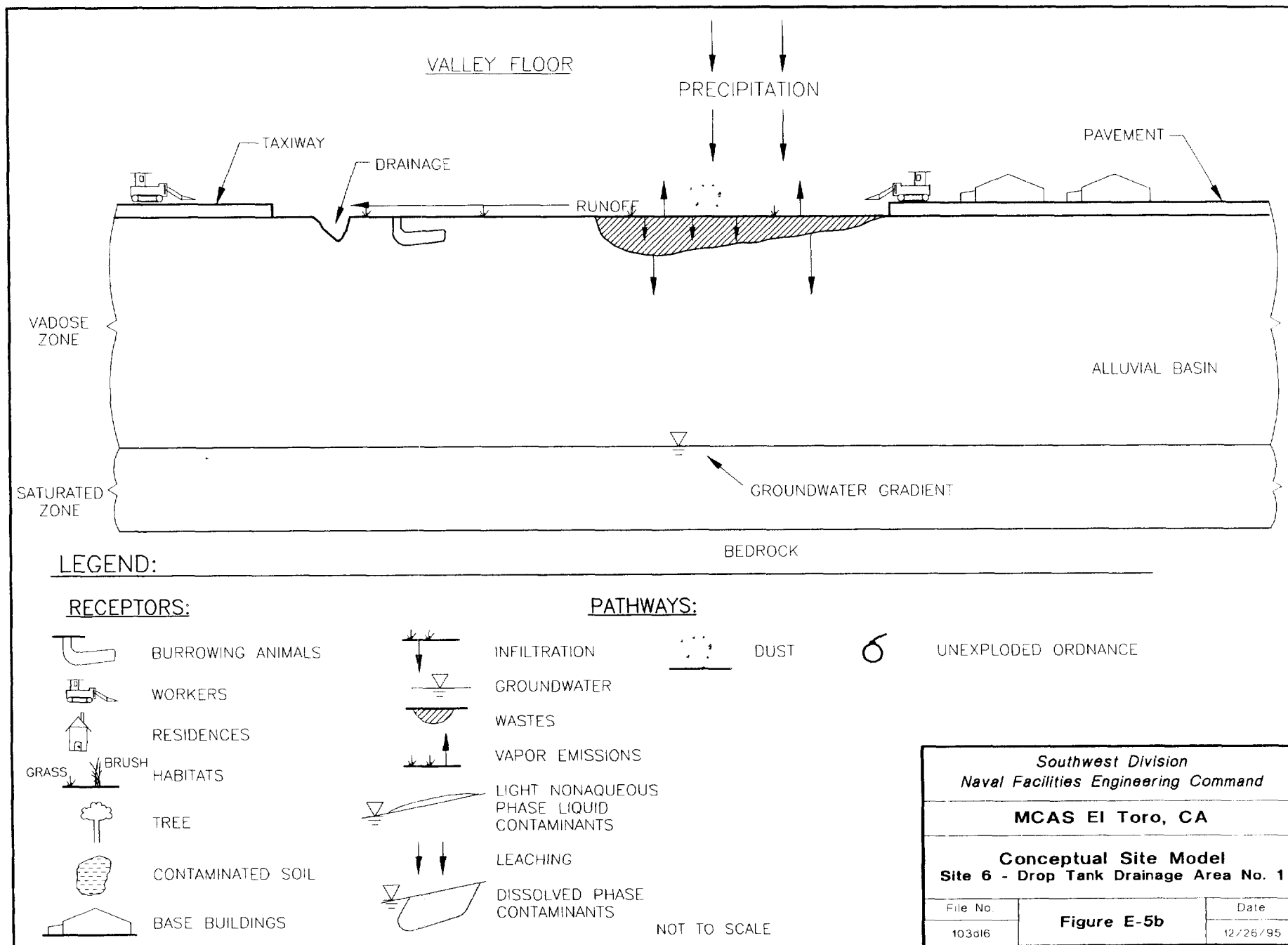
File No. 103516 Date 10/26/95

Figure E-5a

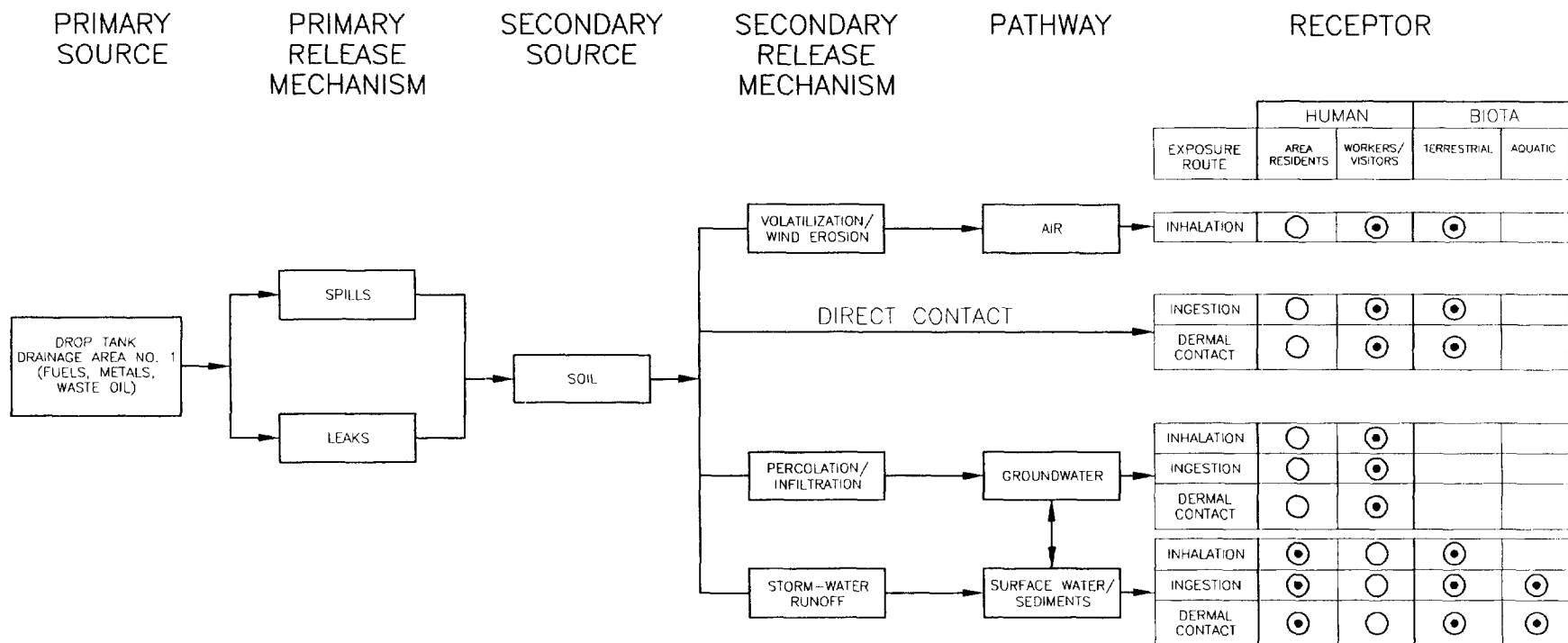


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 6 - Drop Tank Drainage Area No.1

File No.

103mod6

Figure E-5c

Date

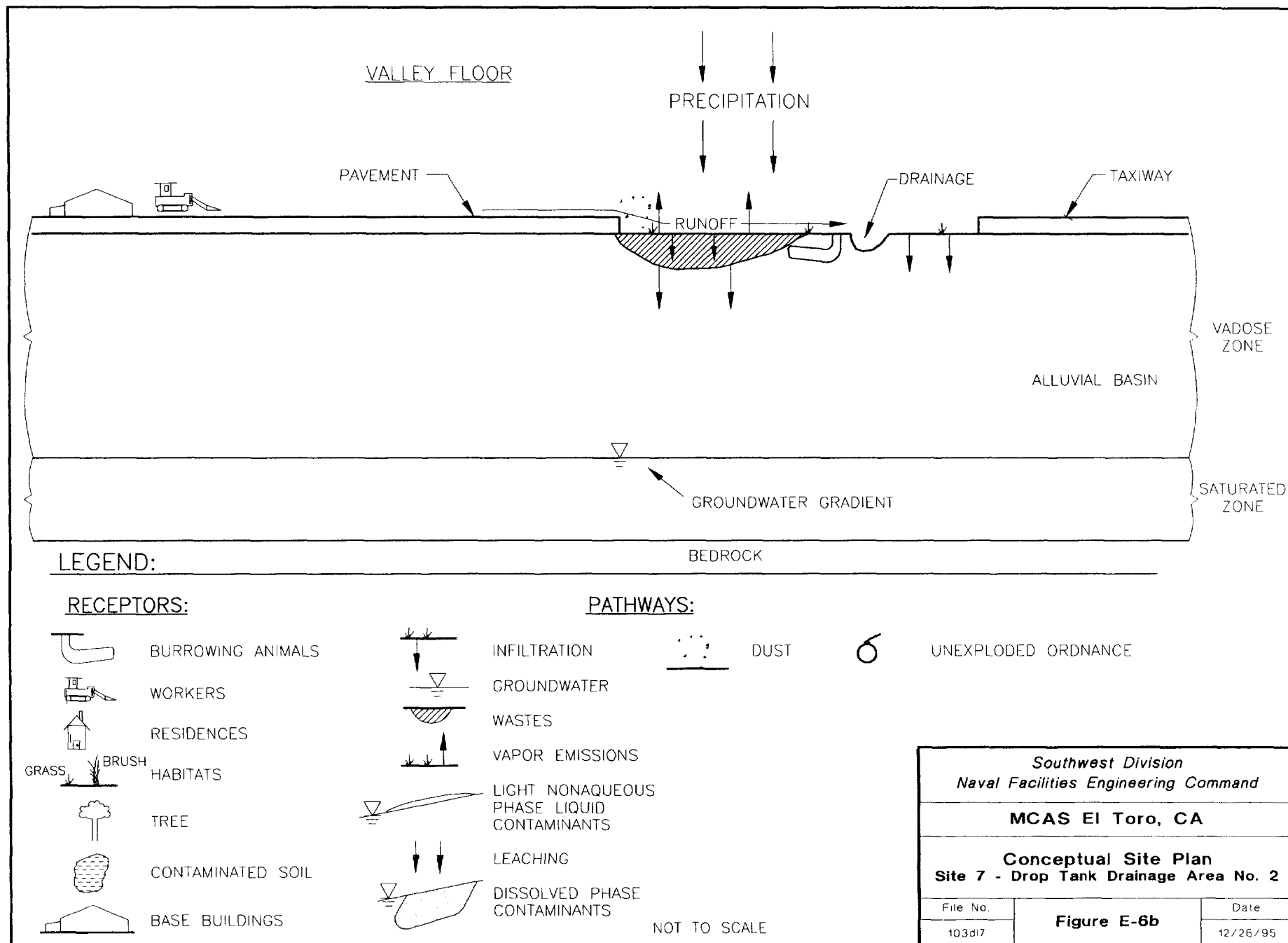
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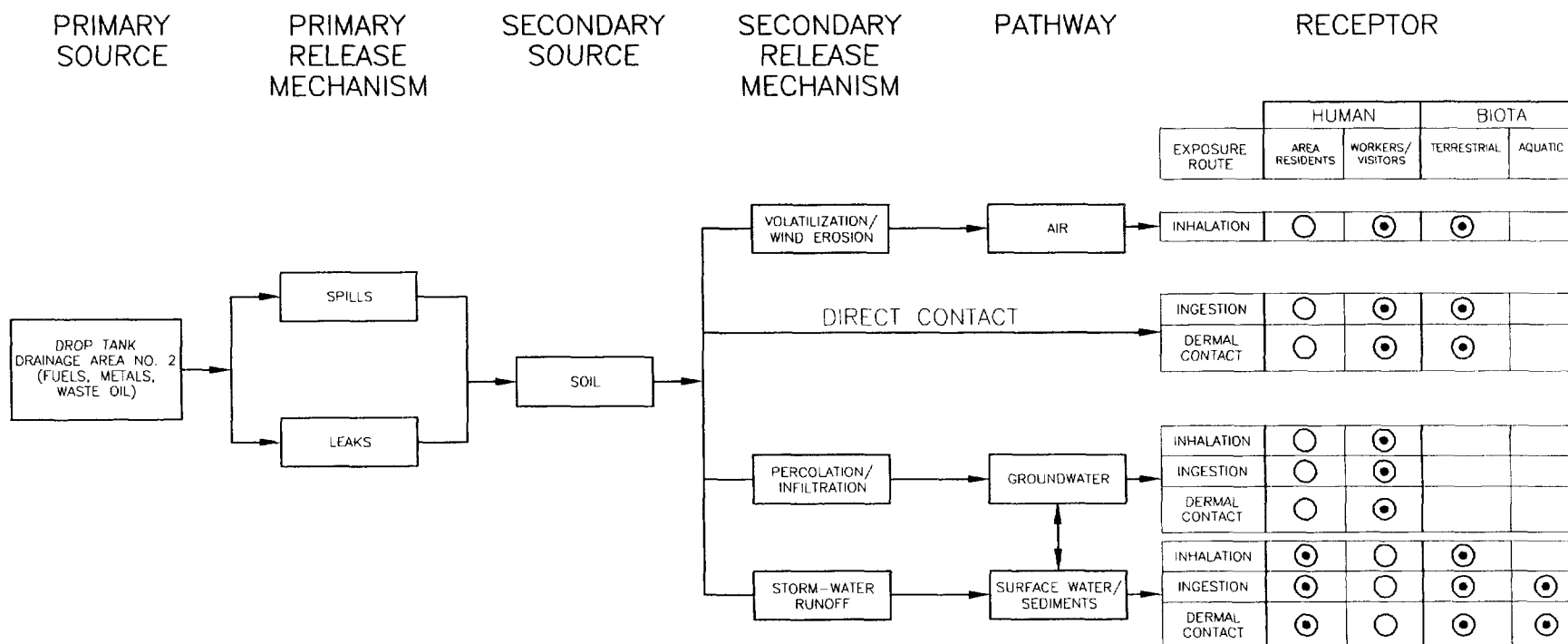
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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS EI Toro, CA

Exposure Routes and Receptors  
Site 7 - Drop Tank Drainage Area No. 2

File No.

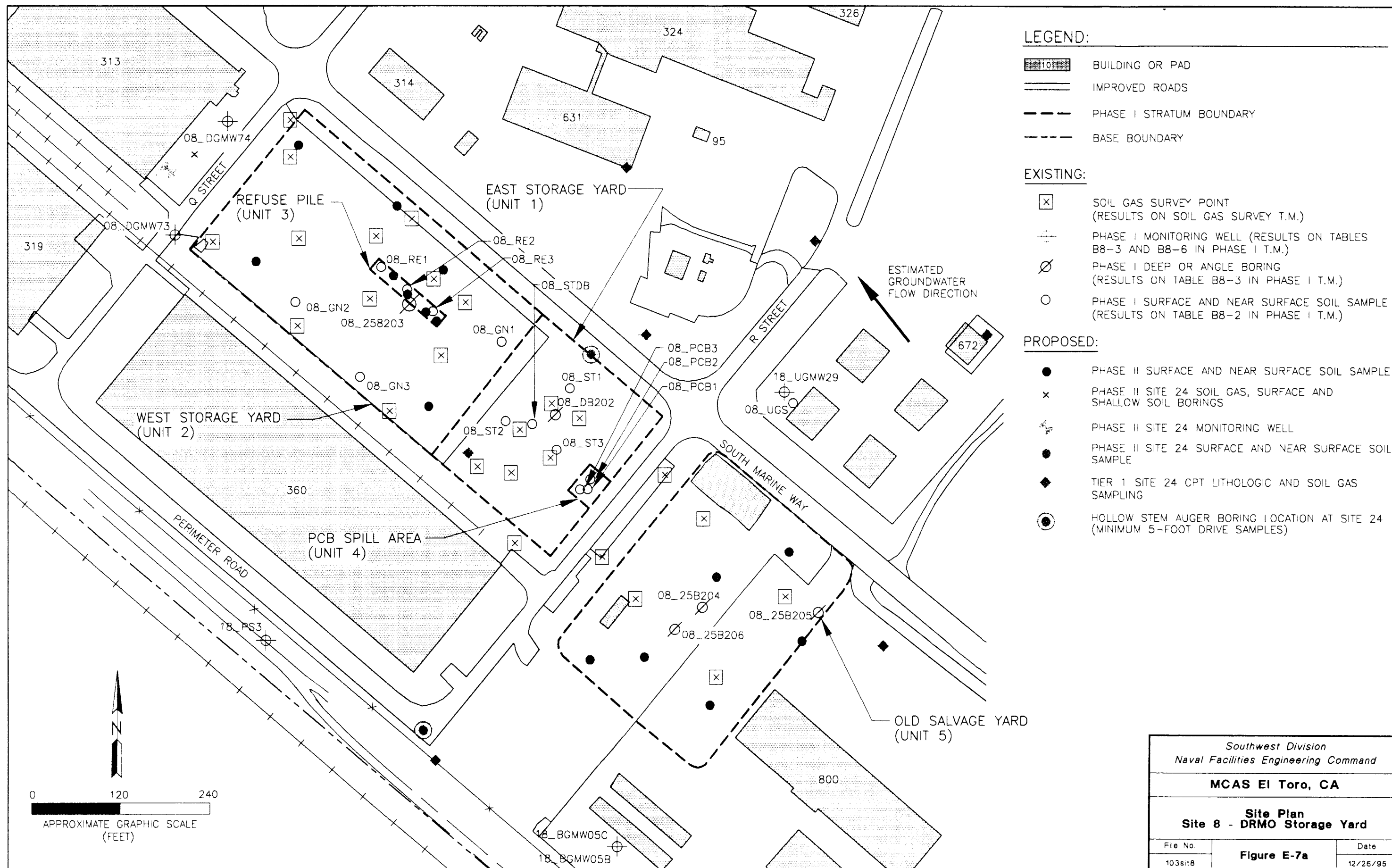
103mod7

Figure E-6c

Date

12/26/95

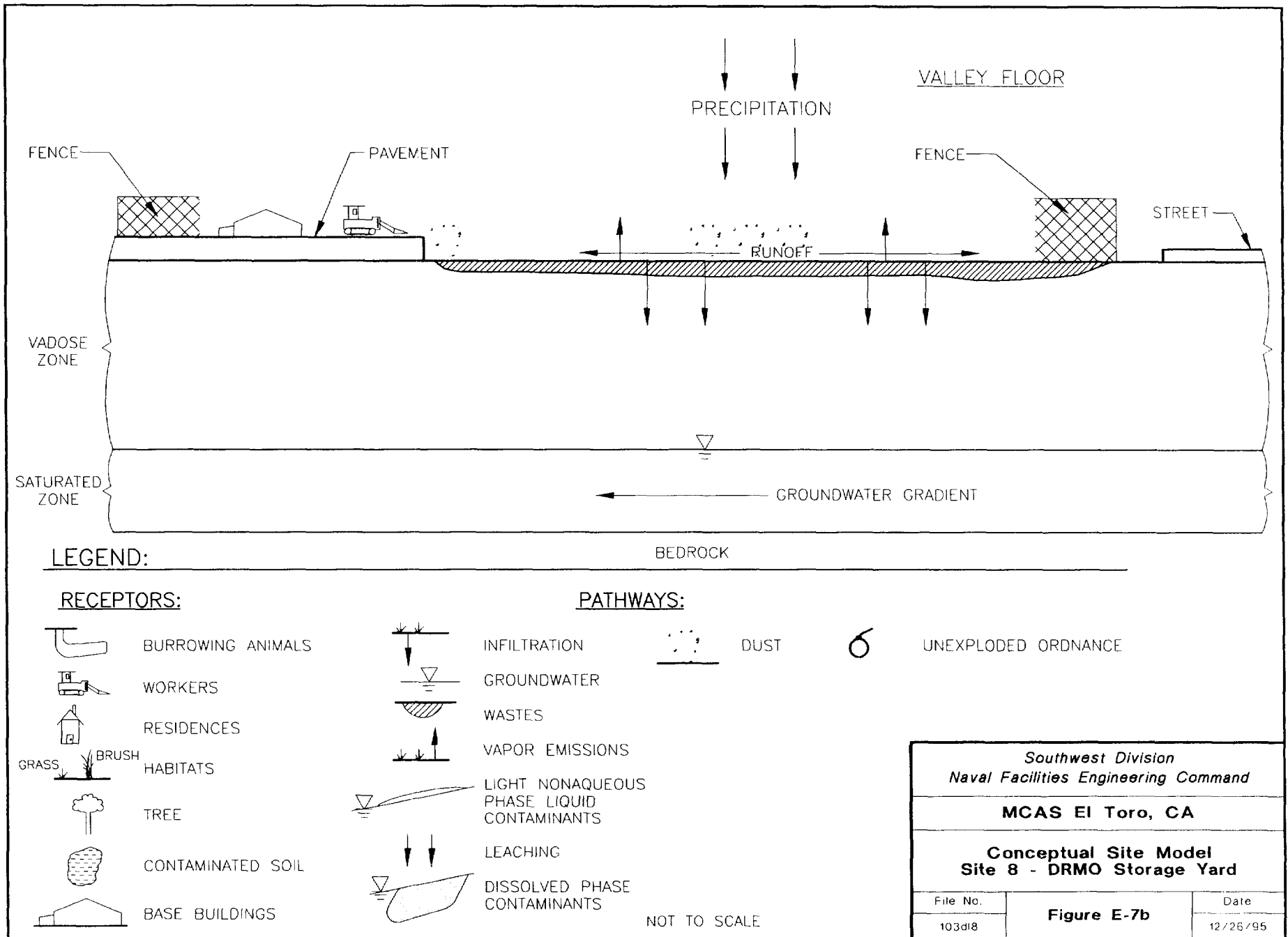
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Southwest Division Naval Facilities Engineering Command		
MCAS El Toro, CA		
Site Plan Site 8 - DRMO Storage Yard		
File No.	Figure E-7a	Date
103s1t8		12/26/95

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PRIMARY  
SOURCE

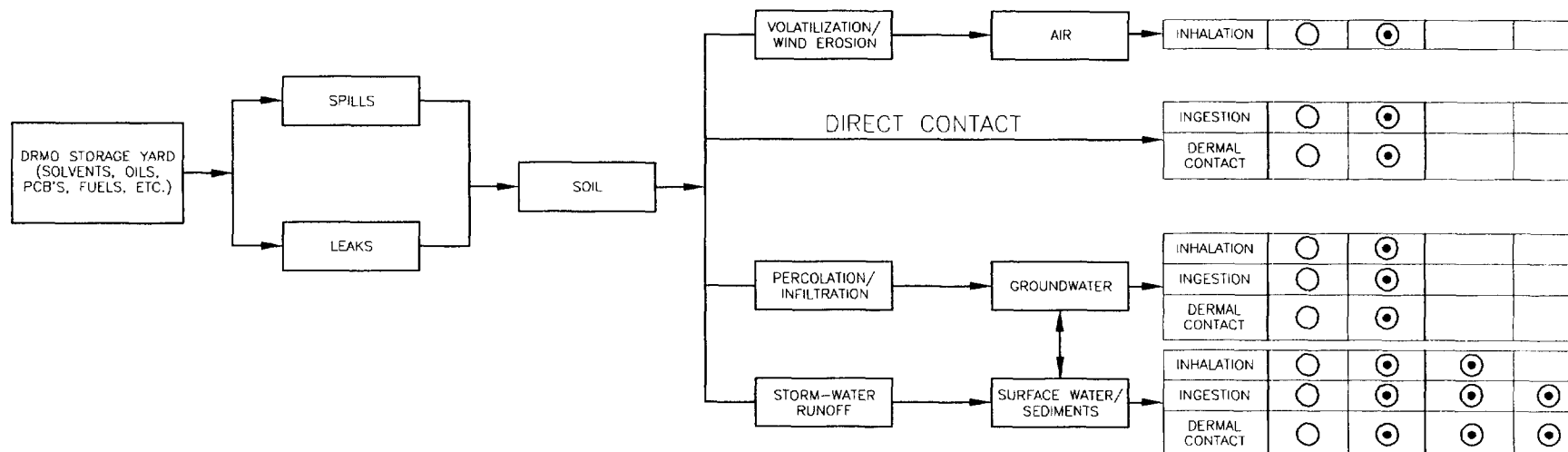
PRIMARY  
RELEASE  
MECHANISM

SECONDARY  
SOURCE

SECONDARY  
RELEASE  
MECHANISM

PATHWAY

RECEPTOR



LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

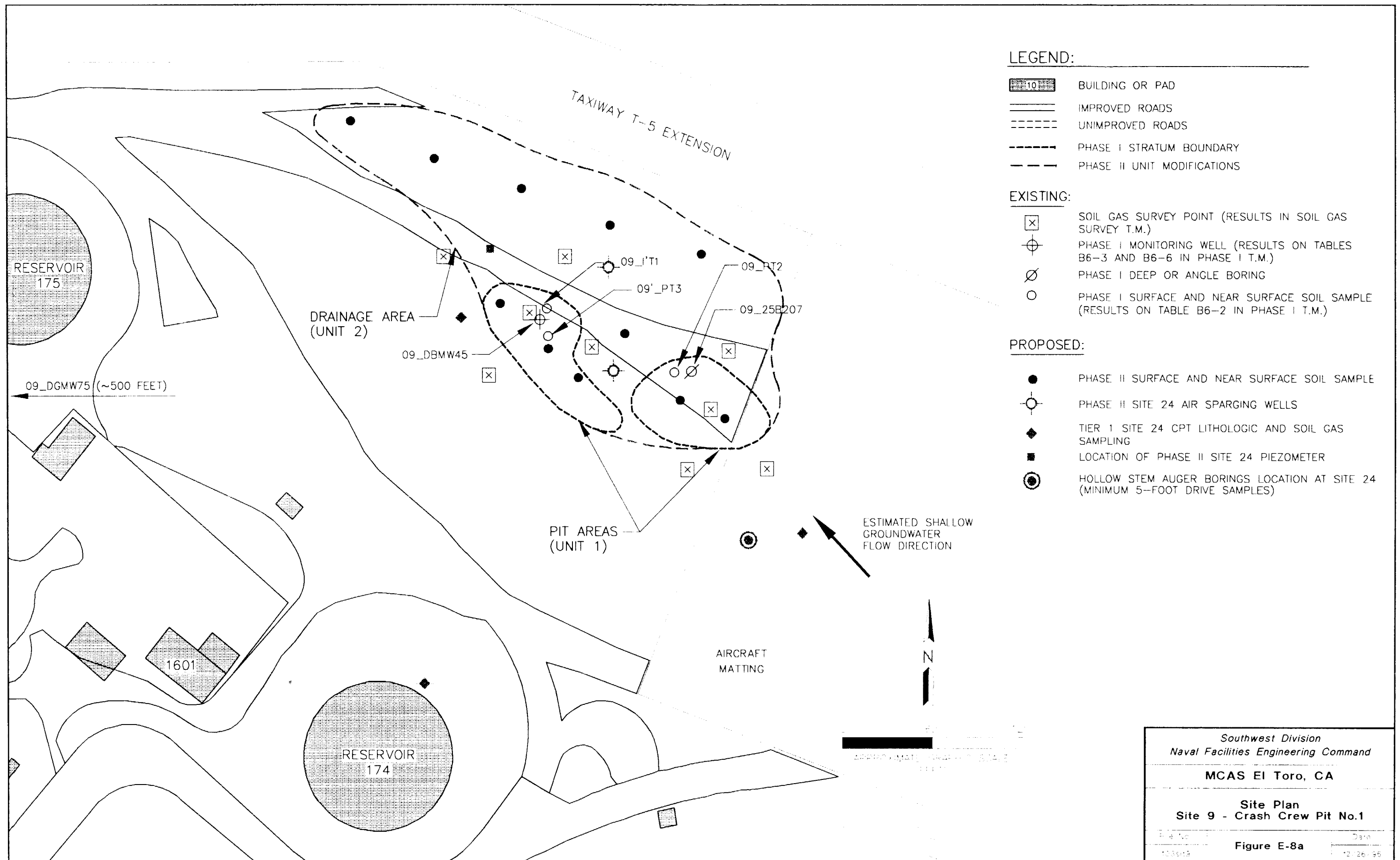
MCAS El Toro, CA

Exposure Routes and Receptors  
Site 8 - DRMO Storage Yard

File No.	Figure E-7c	Date
103mod8		12/26/95



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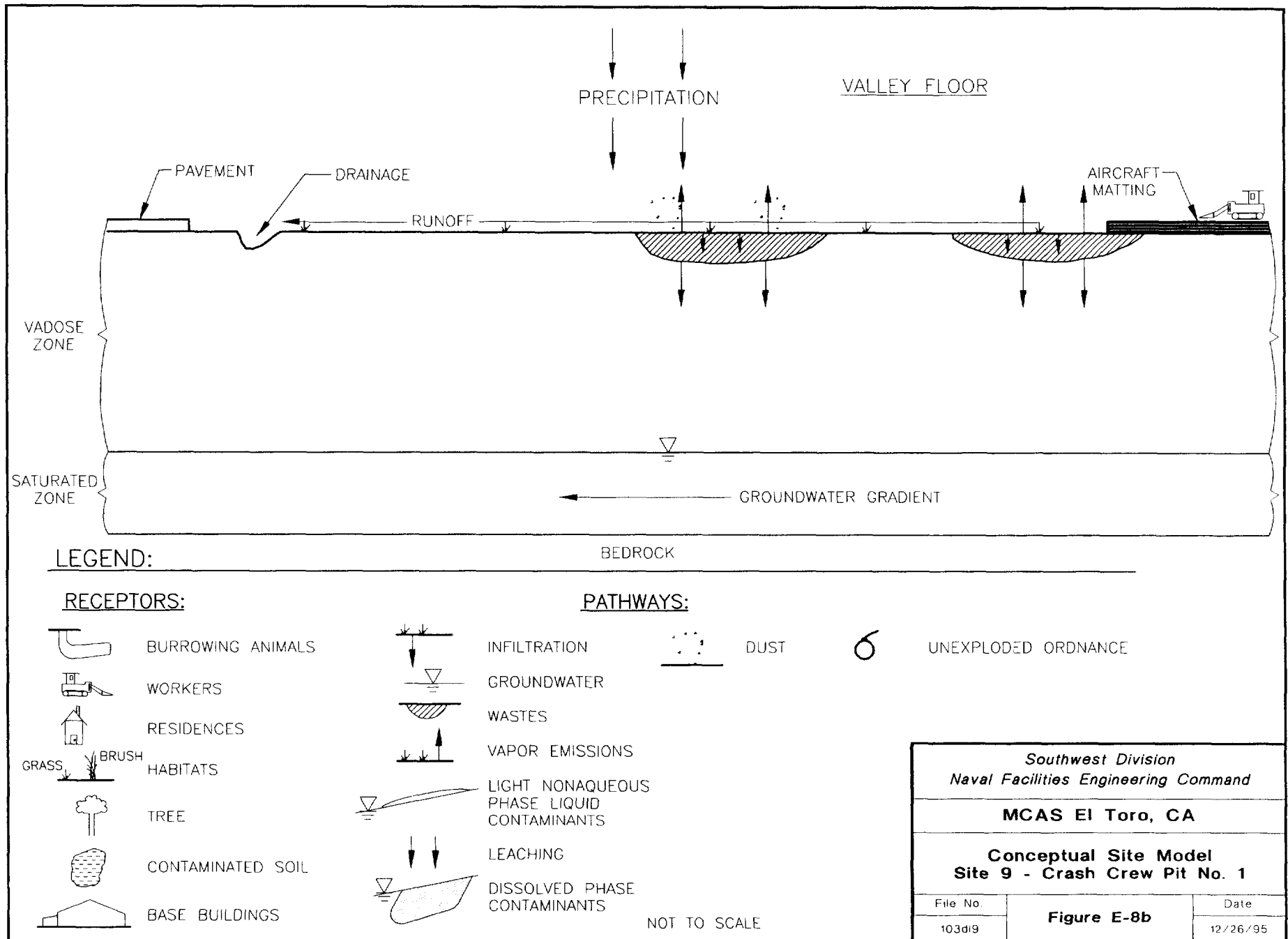
Southwest Division  
Naval Facilities Engineering Command  
MCAS El Toro, CA

**Site Plan**  
Site 9 - Crash Crew Pit No.1

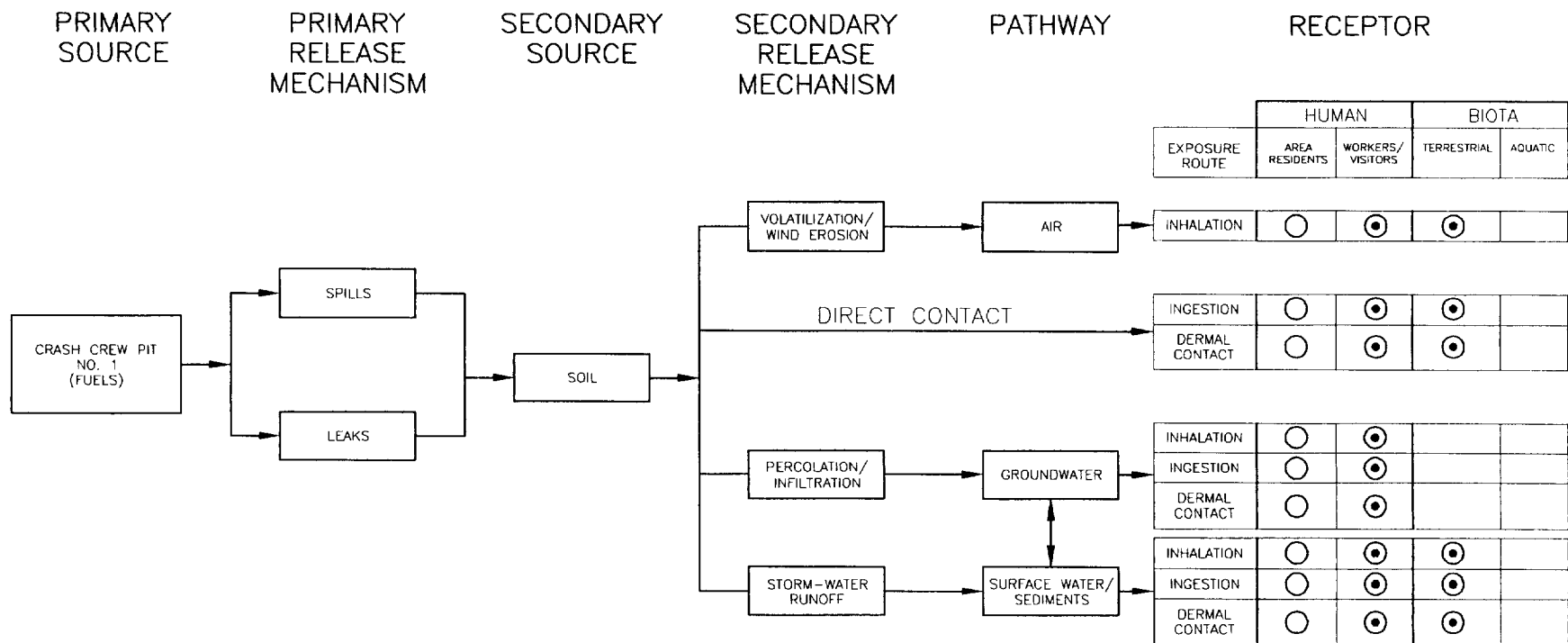
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Figure E-8a

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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 9 - Crash Crew Pit No.1

File No.

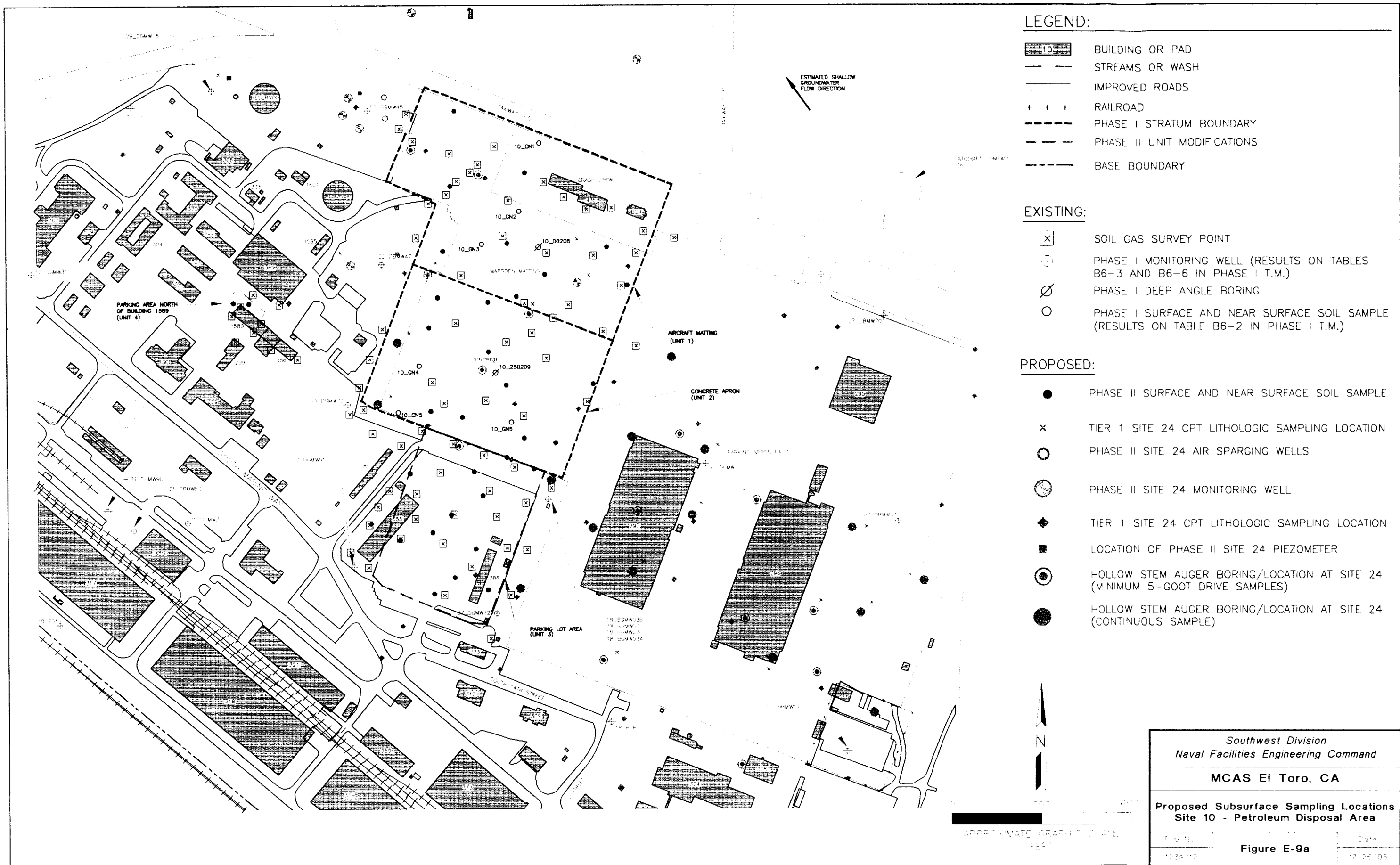
103mod9

Figure E-8c

Date

12/26/95

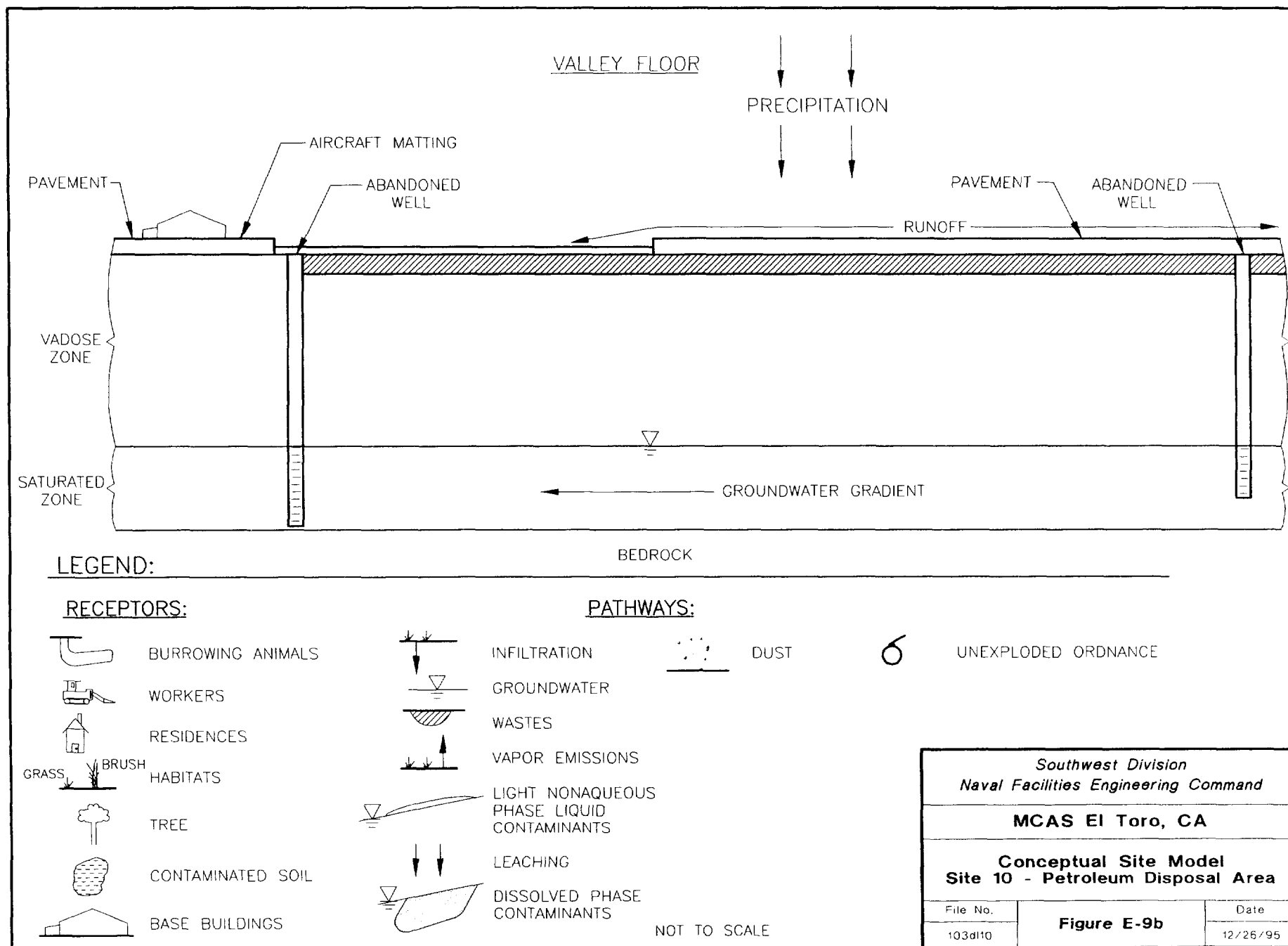
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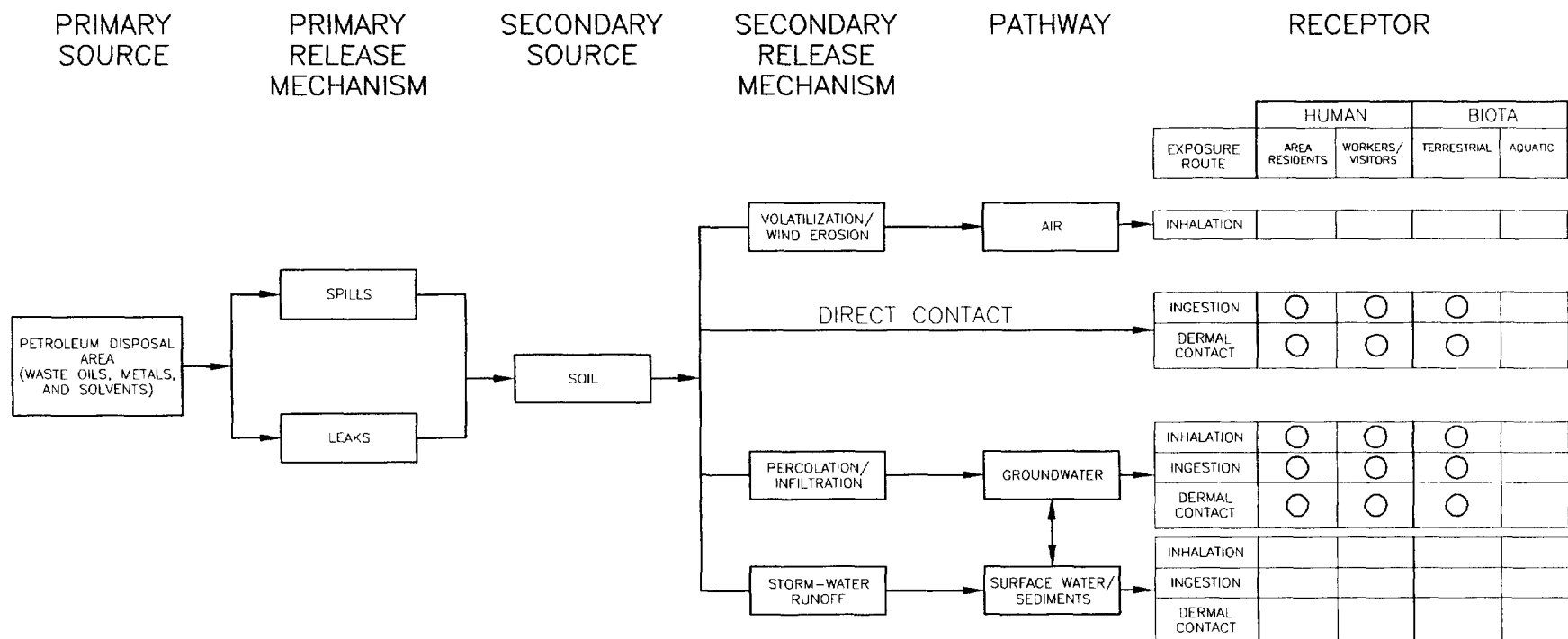


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

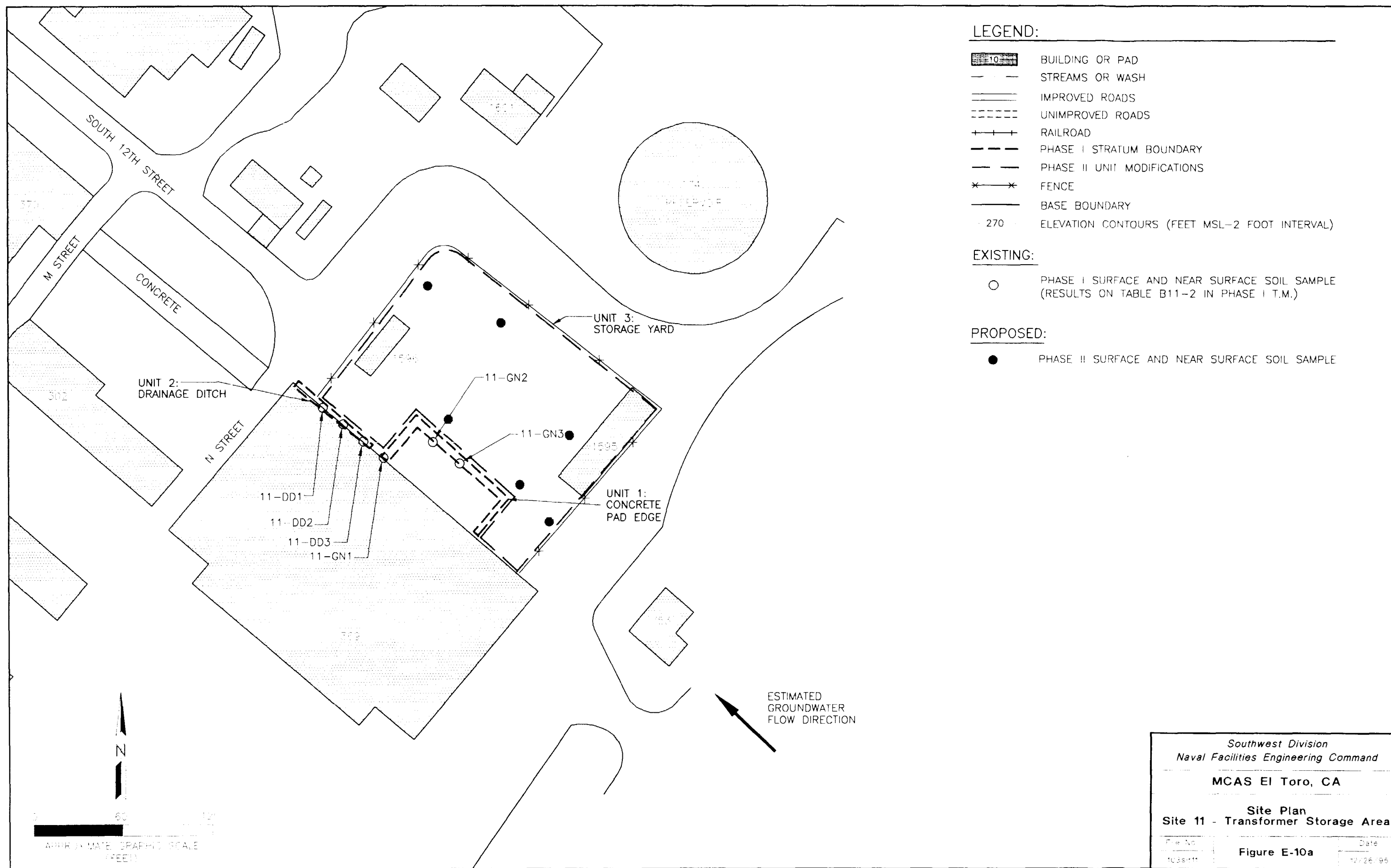
Exposure Routes and Receptors  
Site 10 - Petroleum Disposal Area

File No.  
103Q0248

Figure E-9c

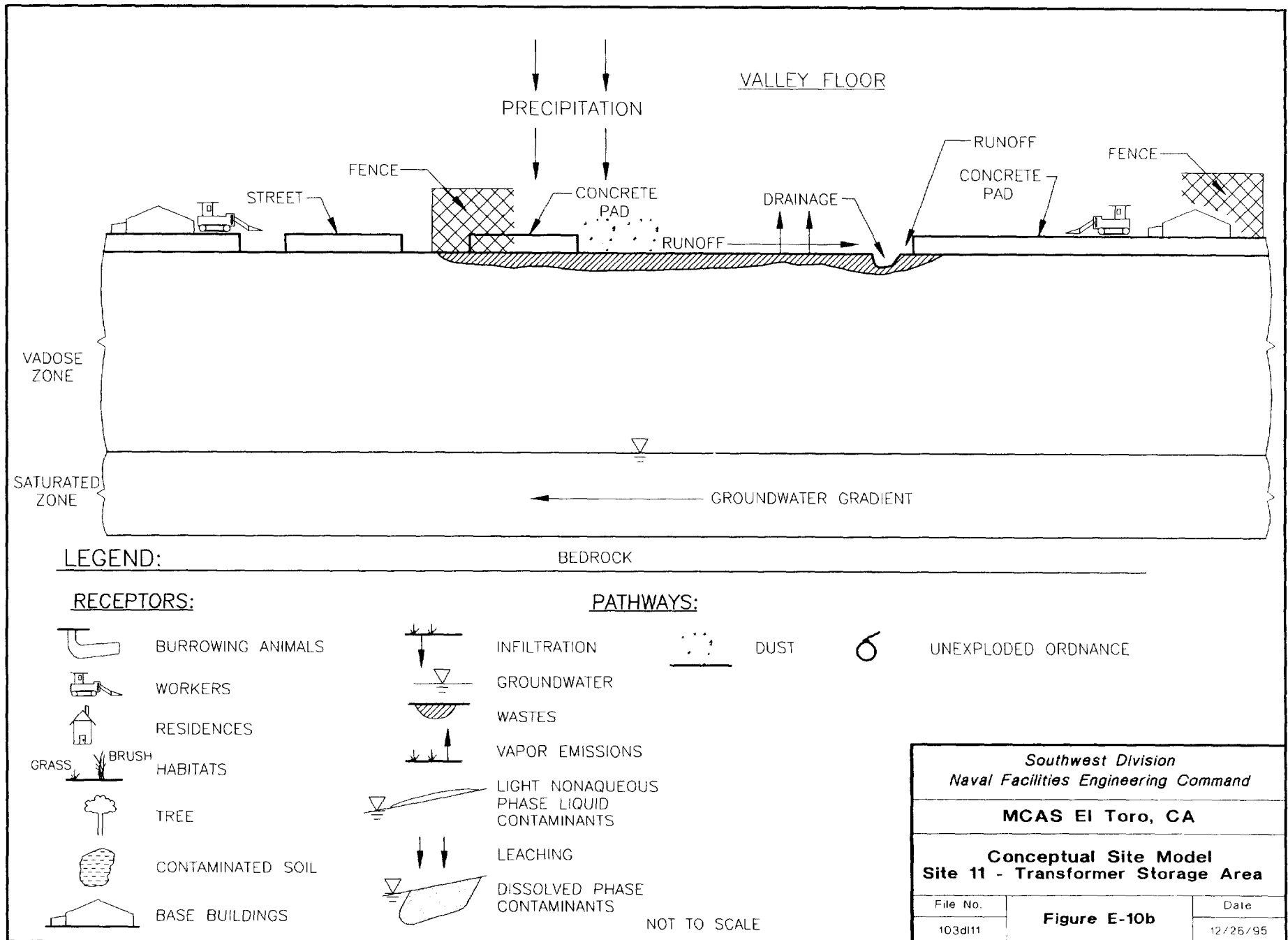
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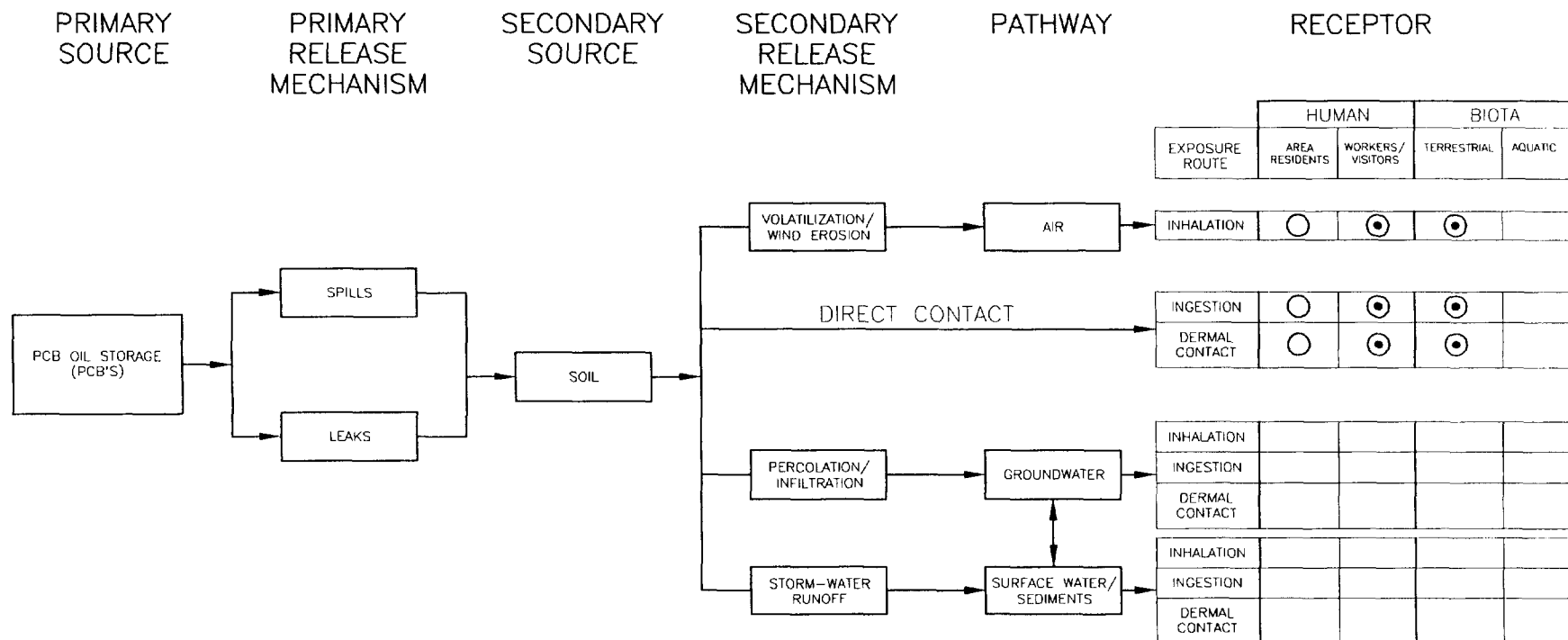
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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 11 - Transformer Storage Area

File No.

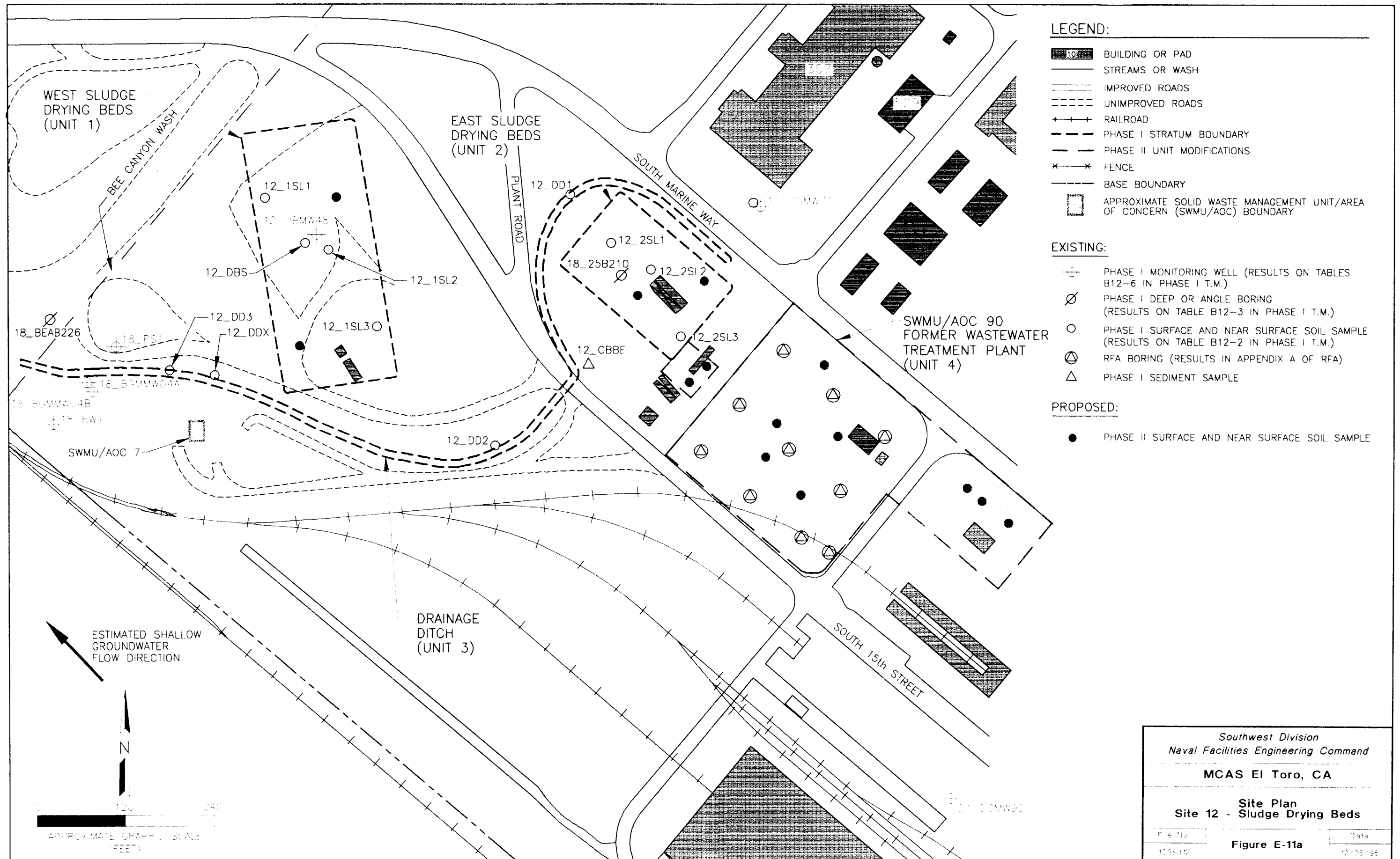
103mod11

Figure E-10c

Date

12/27/95

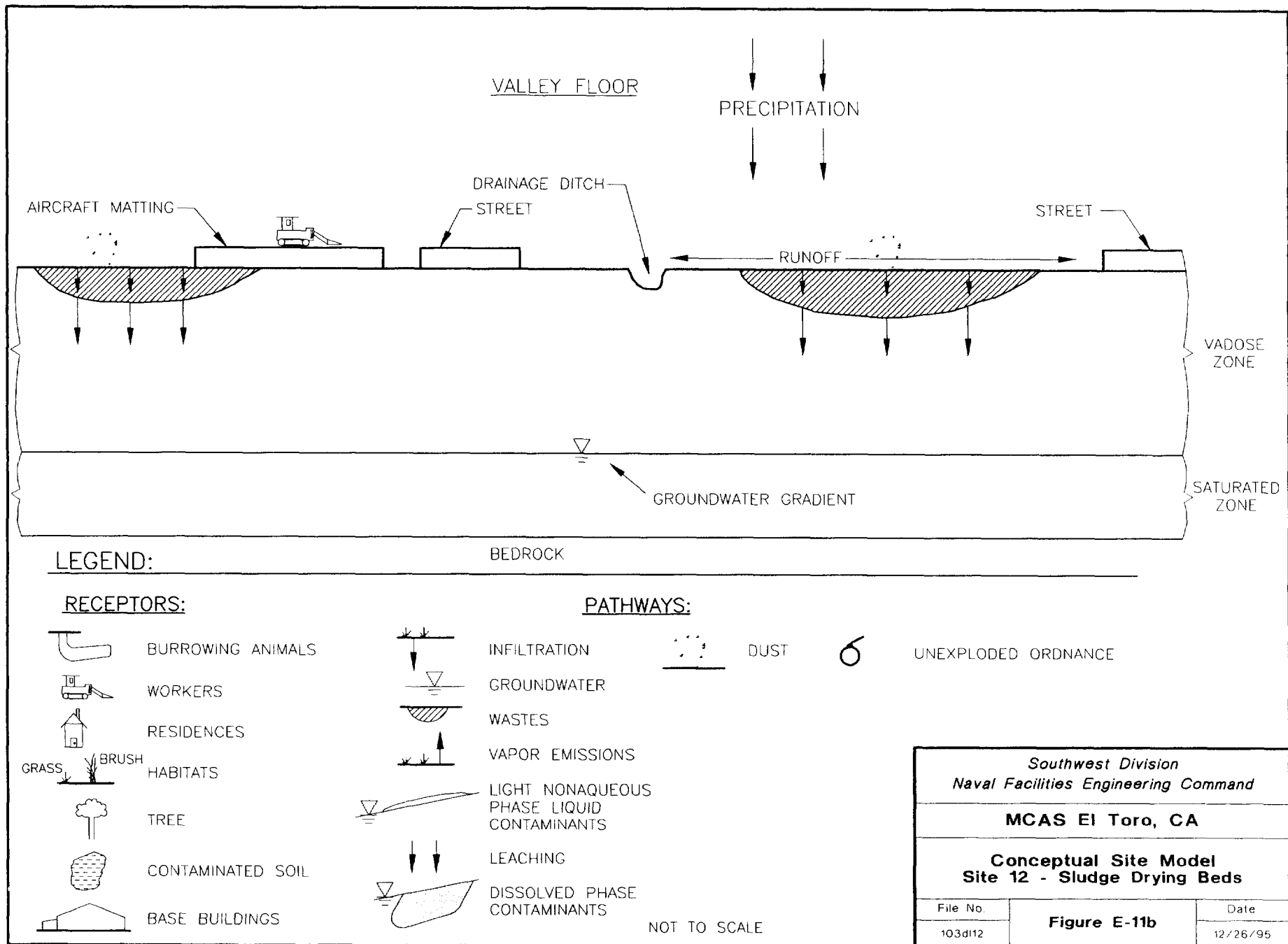
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Southwest Division Naval Facilities Engineering Command		
MCAS El Toro, CA		
Site Plan Site 12 - Sludge Drying Beds		
File No. 1035012	Figure E-11a	Date 12/28/95

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PRIMARY  
SOURCE

PRIMARY  
RELEASE  
MECHANISM

SECONDARY  
SOURCE

SECONDARY  
RELEASE  
MECHANISM

PATHWAY

RECEPTOR

SLUDGE DRYING BEDS  
(METALS, PESTICIDES,  
PCB'S, HERBICIDES,  
FUELS)

SPILLS

LEAKS

SOIL

VOLATILIZATION/  
WIND EROSION

AIR

DIRECT CONTACT

PERCOLATION/  
INFILTRATION

GROUNDWATER

STORM-WATER  
RUNOFF

SURFACE WATER/  
SEDIMENTS

EXPOSURE ROUTE	HUMAN		BIOTA	
	AREA RESIDENTS	WORKERS/ VISITORS	TERRESTRIAL	AQUATIC
INHALATION	○	●	●	
INGESTION	○	●	●	
DERMAL CONTACT	○	●	●	
INHALATION	○	●		
INGESTION	○	●		
DERMAL CONTACT	○	●		
INHALATION	○	●	●	●
INGESTION	○	●	●	●
DERMAL CONTACT	○	●	●	●

LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

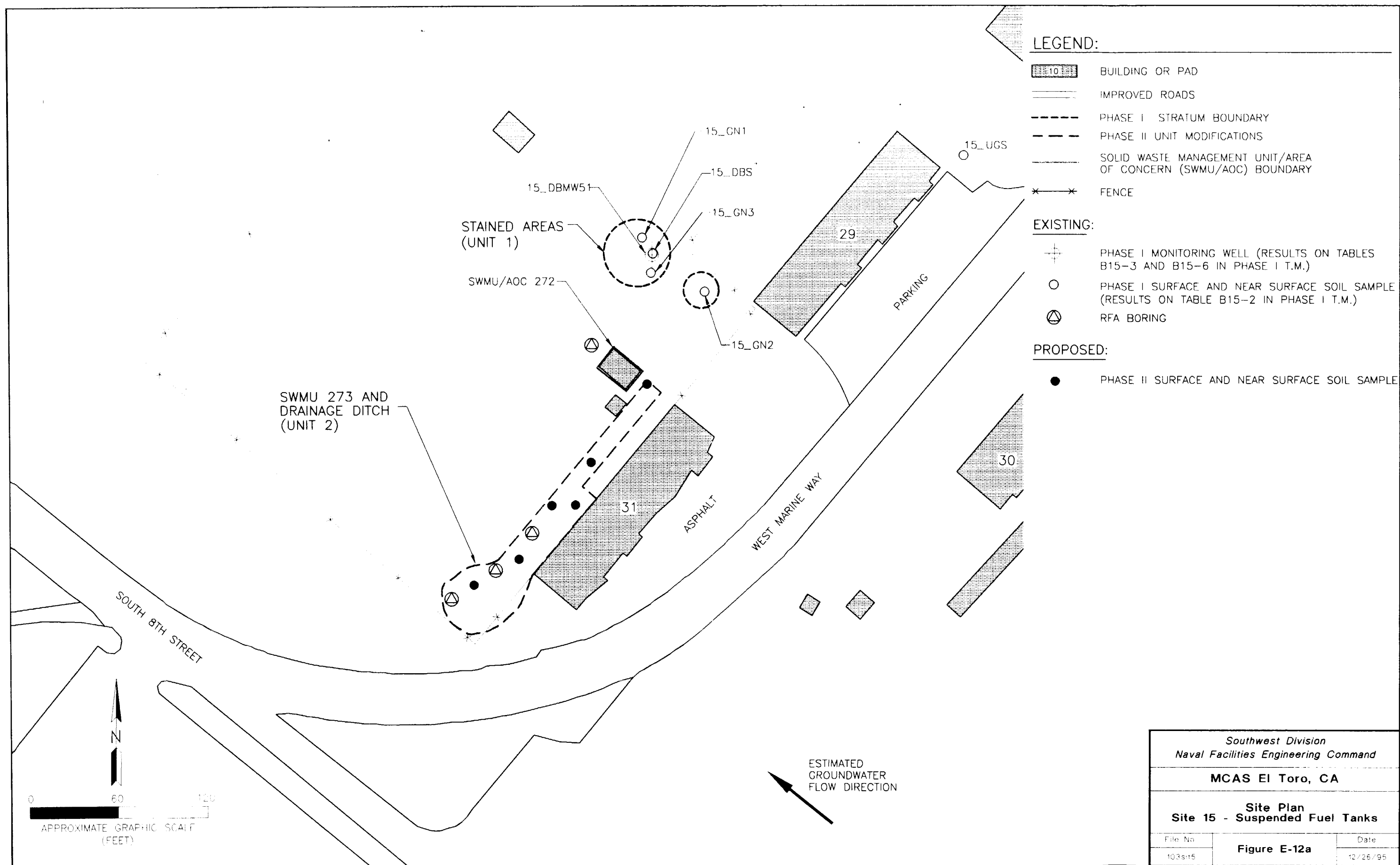
MCAS El Toro, CA

Exposure Routes and Receptors  
Site 12 - Sludge Drying Beds

File No.	Figure E-11c	Date
103mod12		12/26/95

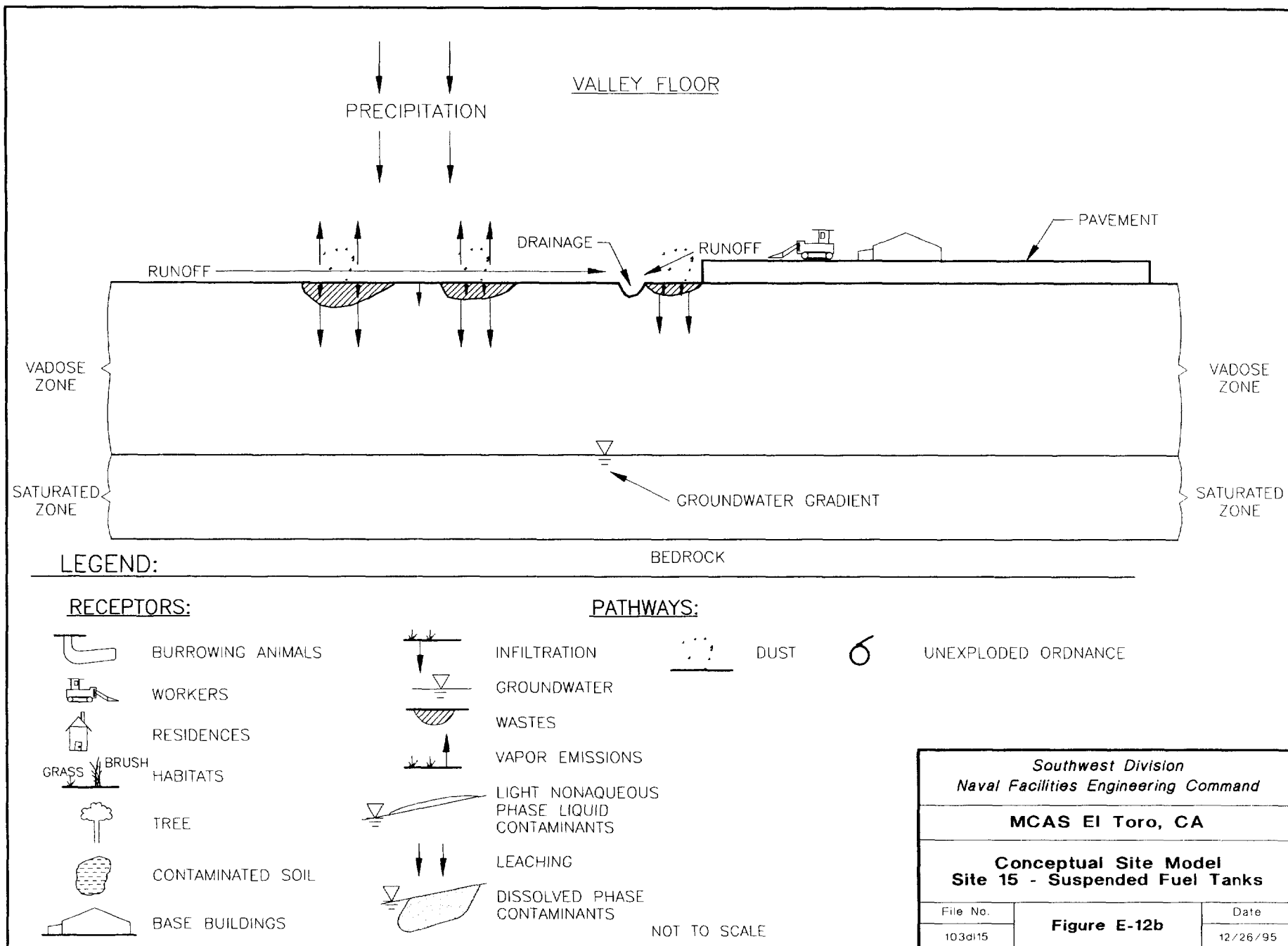


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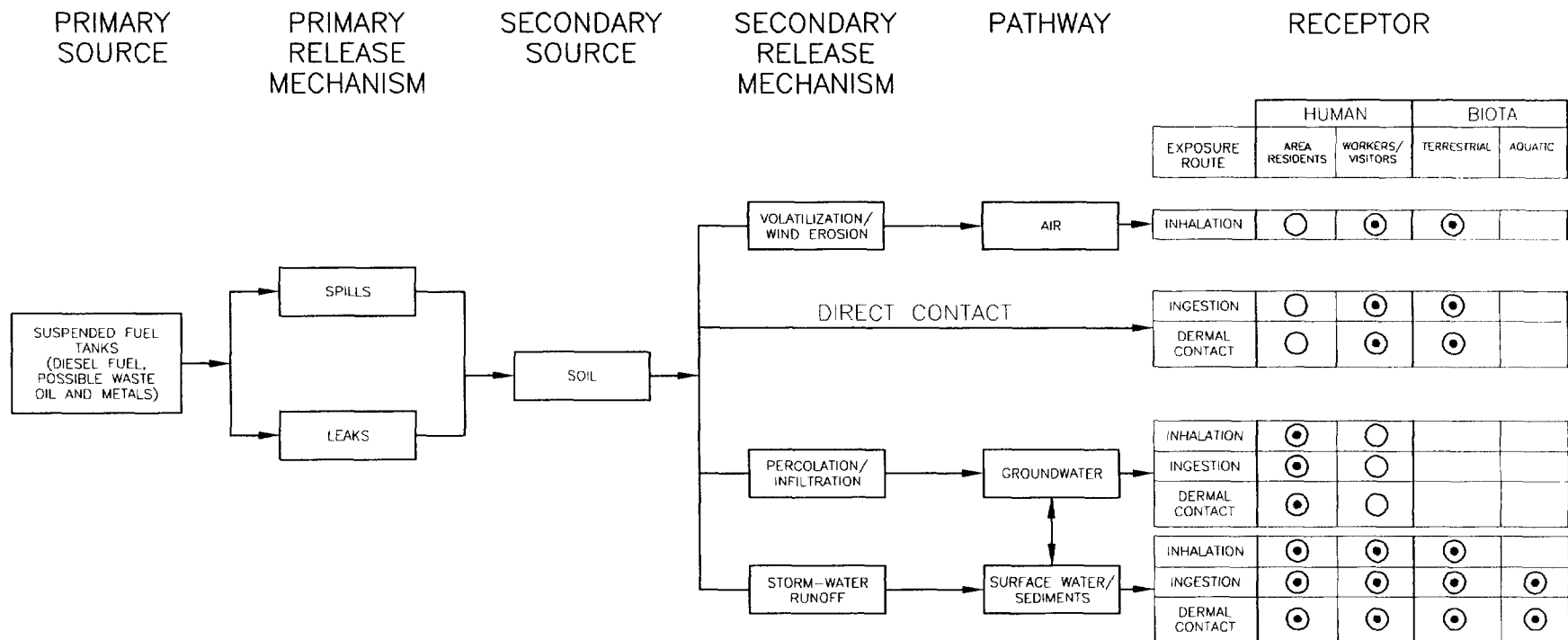


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 15 - Suspended Fuel Tanks

File No.	Figure E-12c	Date
103mod15		12/26/95

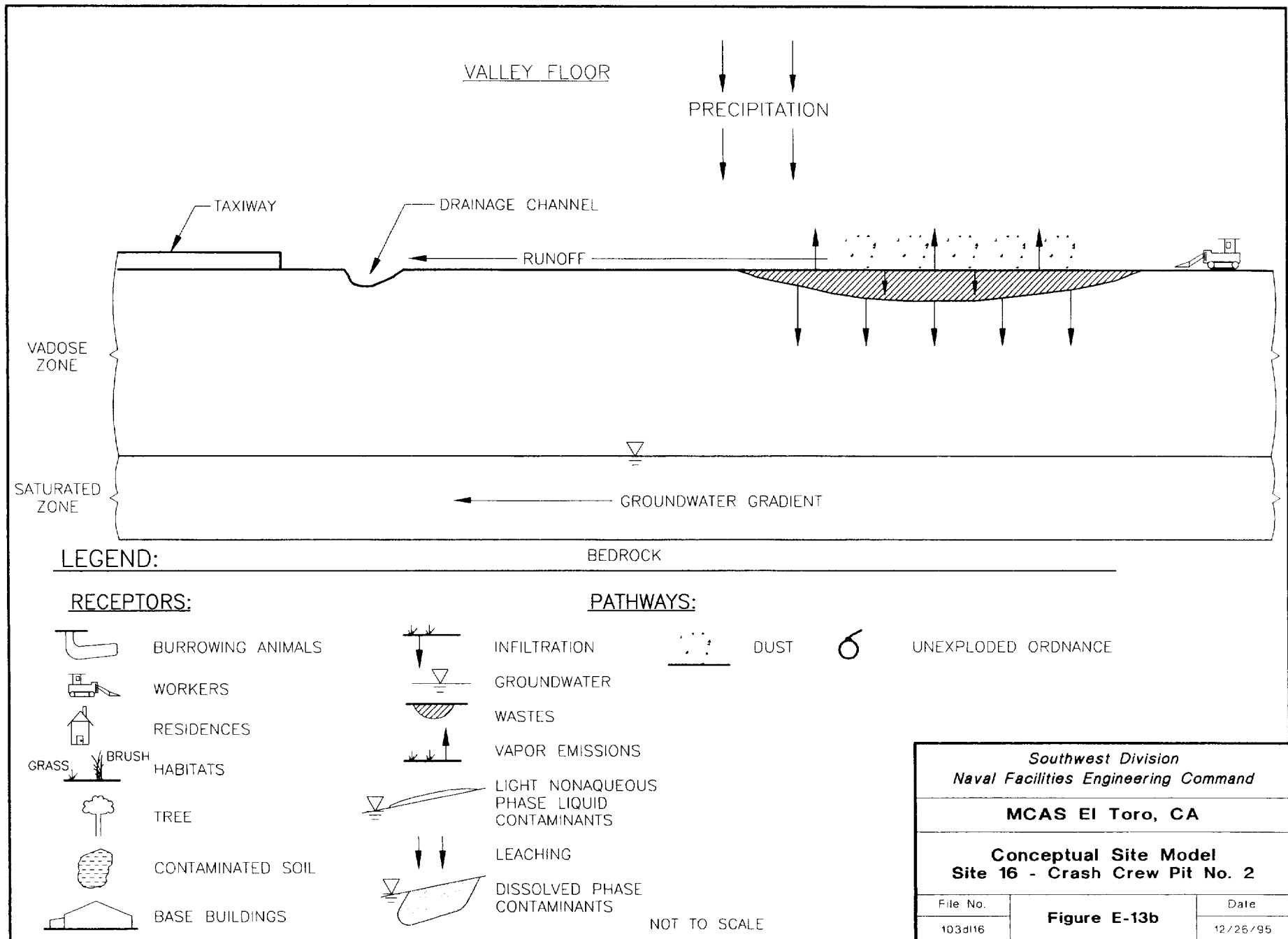
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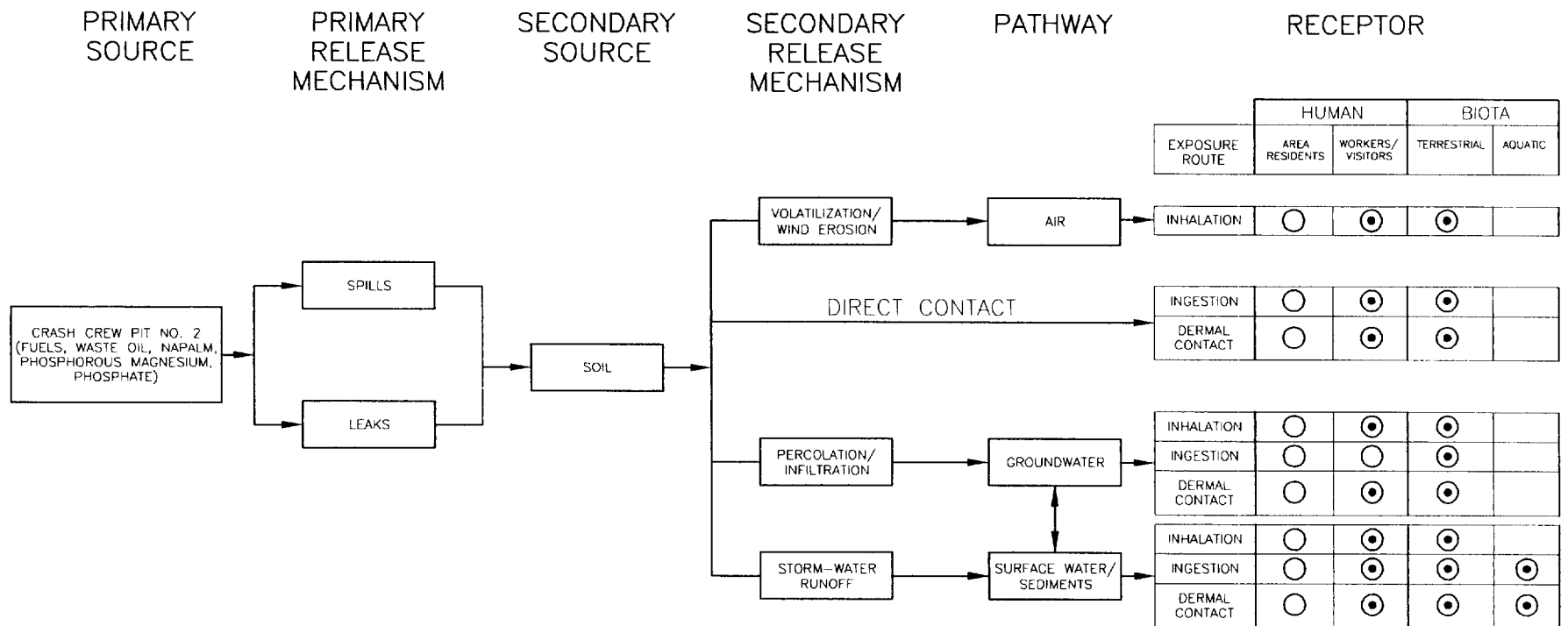


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# LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

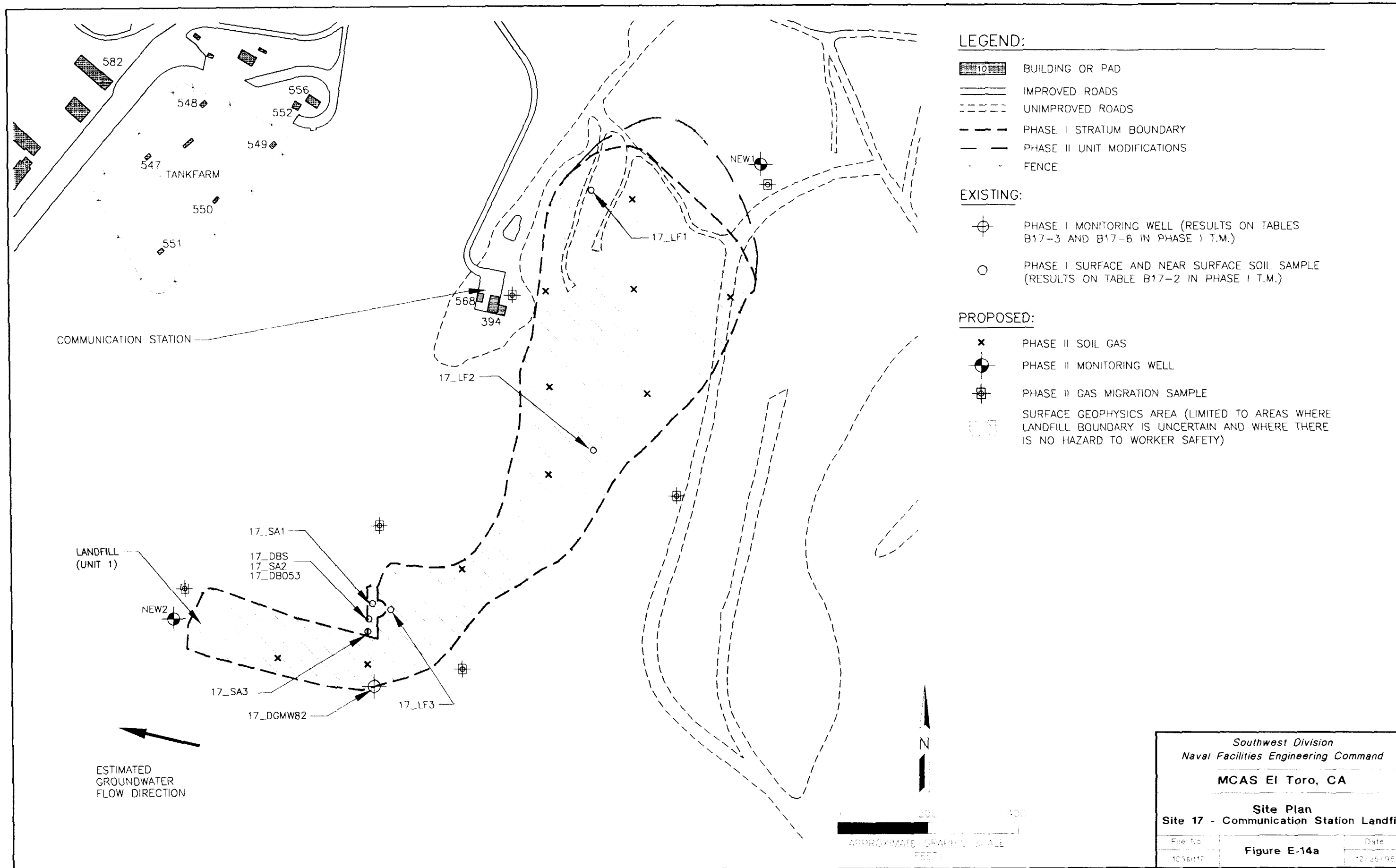
Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 16 - Crash Crew Pit No.2

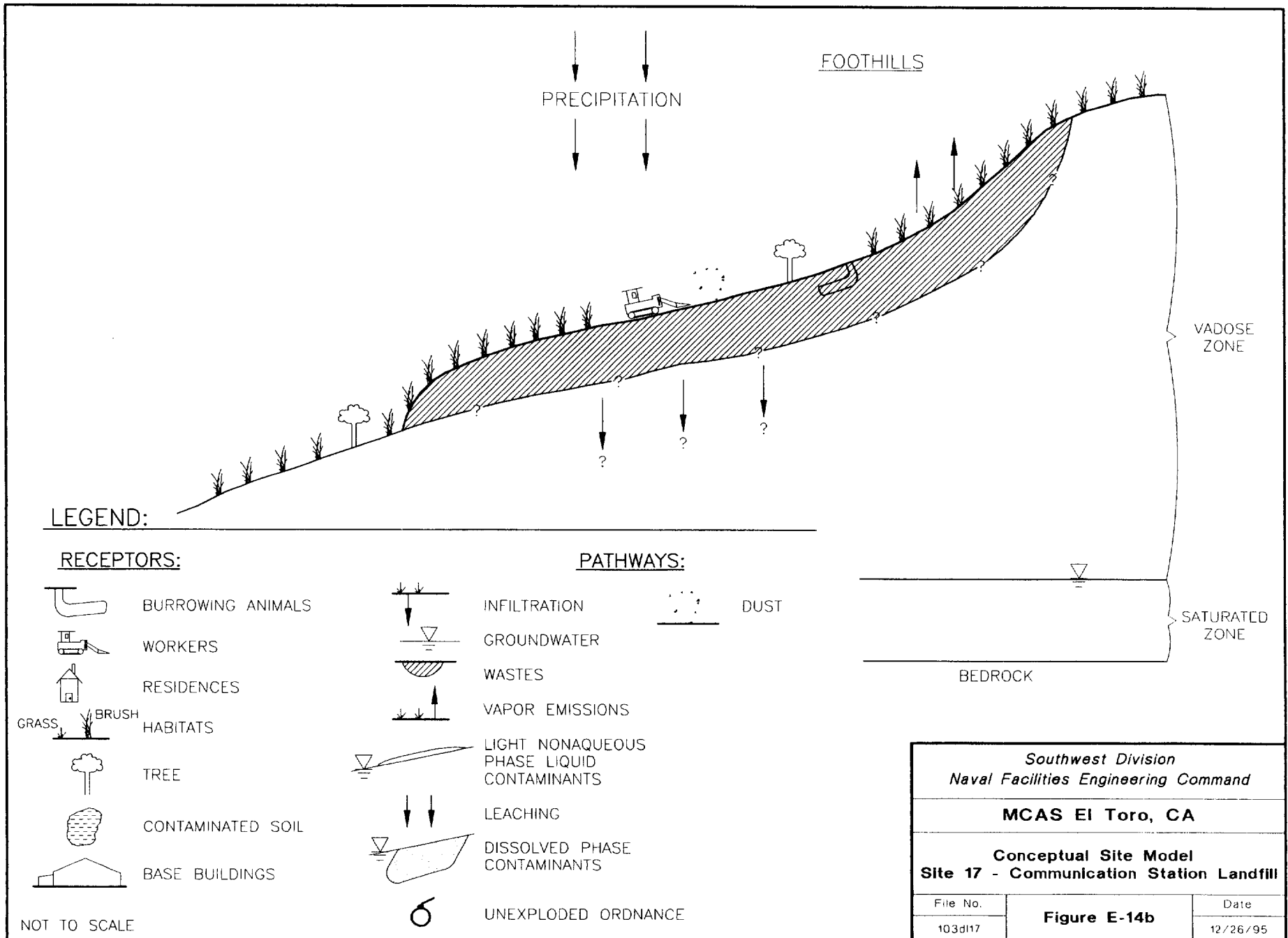
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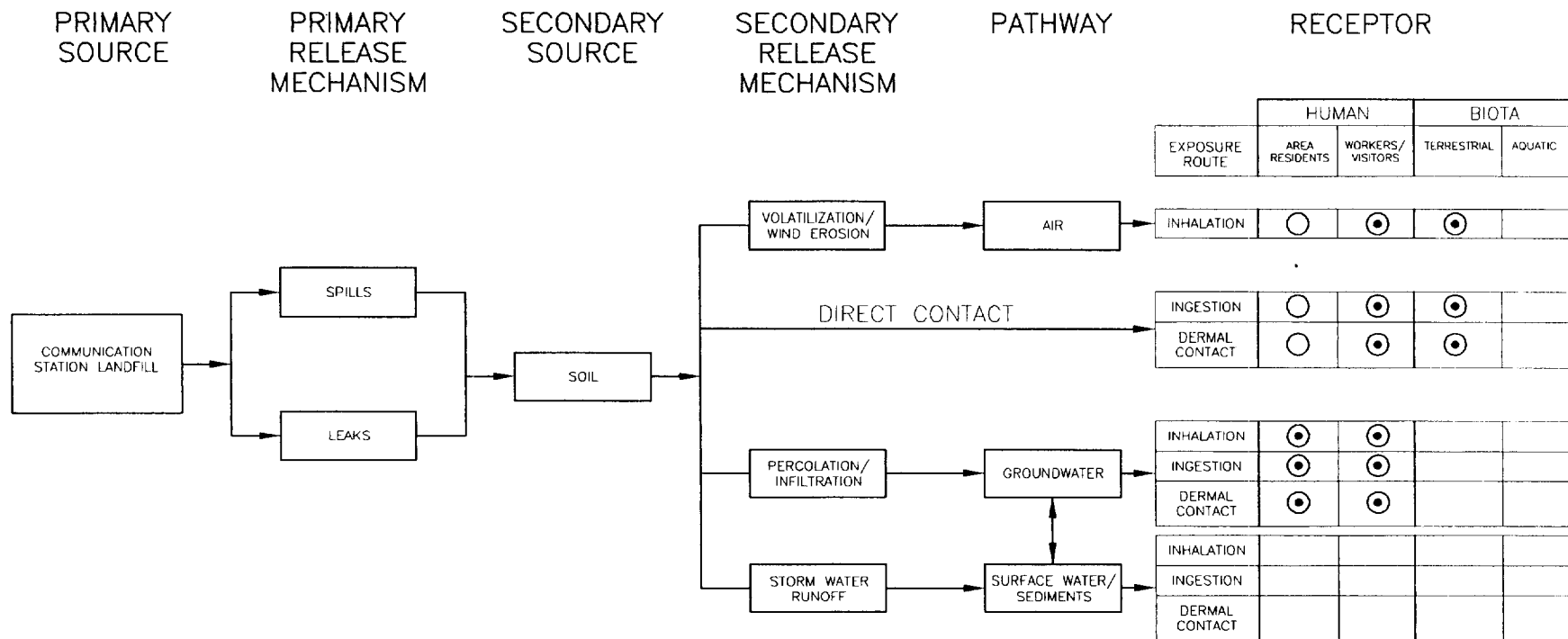
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## LEGEND:

- CURRENT POTENTIAL RECEPTOR  
○ FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 17 - Communication Station Landfill

File No.

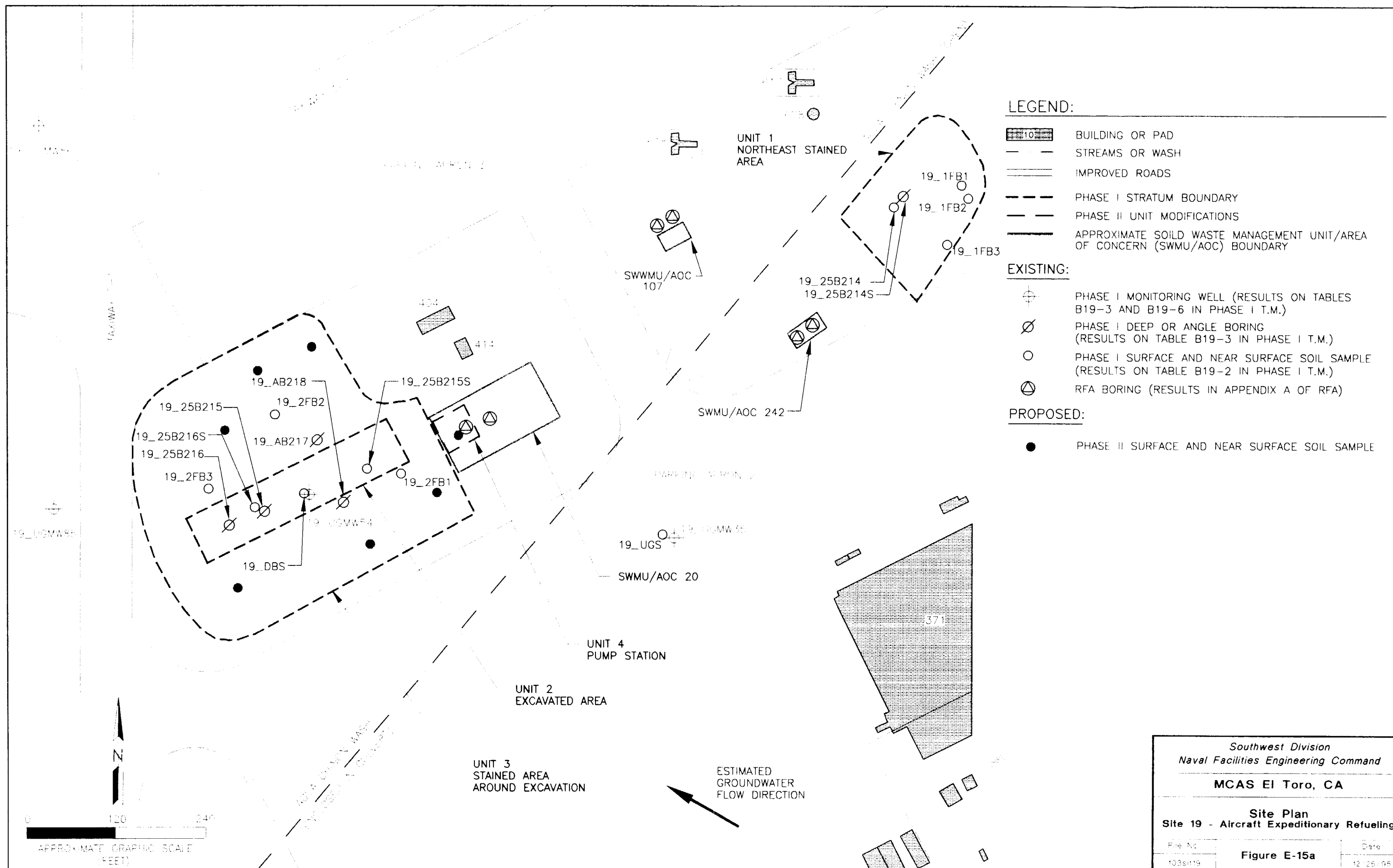
103mod17

Figure E-14c

Date

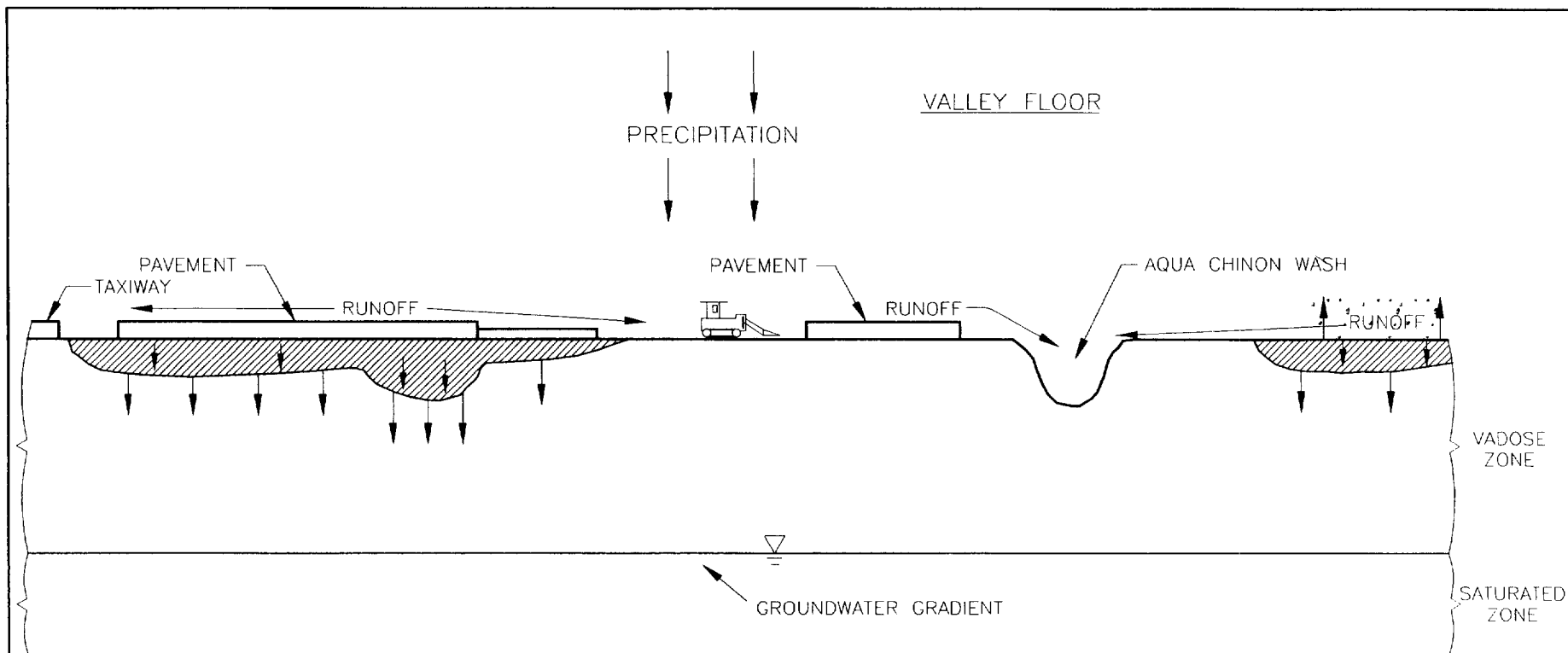
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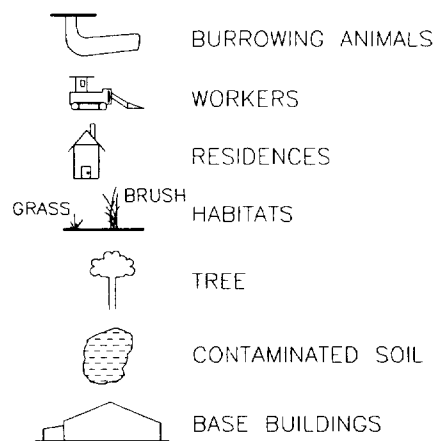
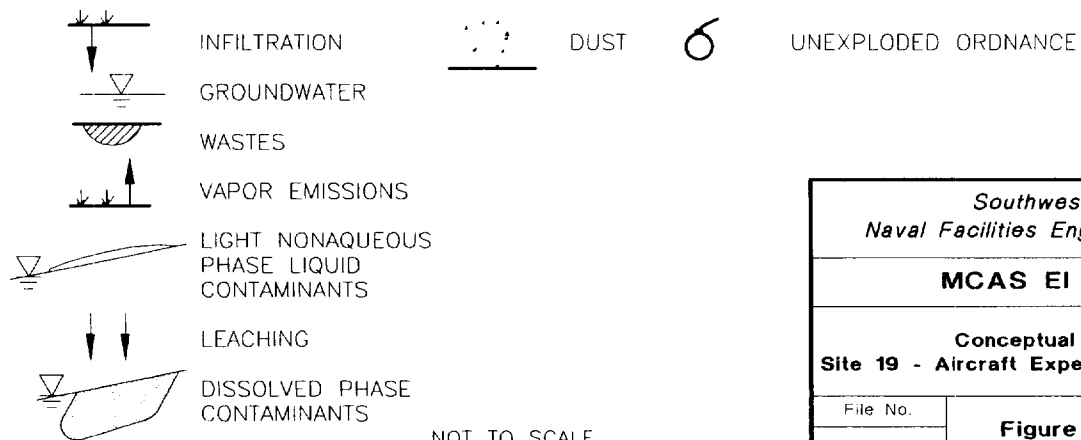


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**LEGEND:**

BEDROCK

**RECEPTORS:****PATHWAYS:**

DUST



UNEXPLODED ORDNANCE

NOT TO SCALE

Southwest Division  
Naval Facilities Engineering Command

**MCAS El Toro, CA**

**Conceptual Site Model  
Site 19 - Aircraft Expeditionary Refueling Site**

File No.

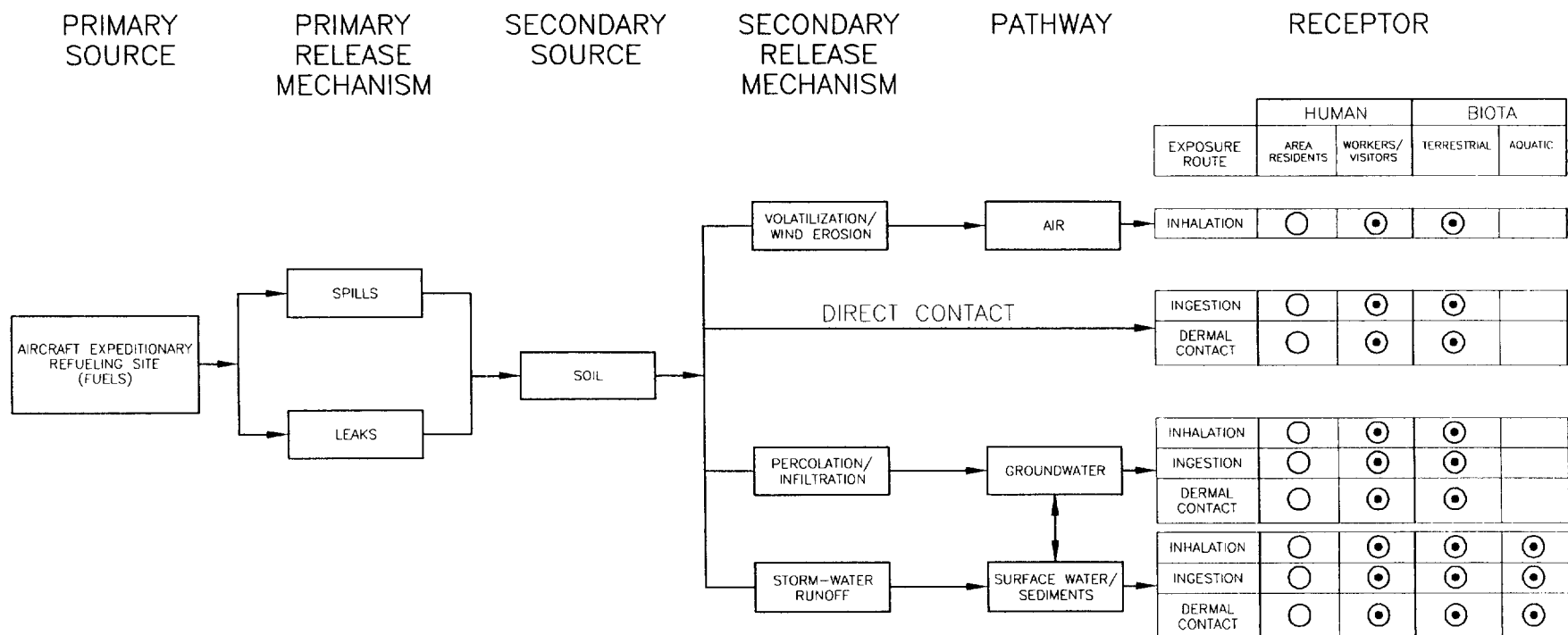
103dl19

**Figure E-15b**

Date

12/26/95

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# LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 19 - Aircraft Expeditionary Refueling Site

File No.

103mod19

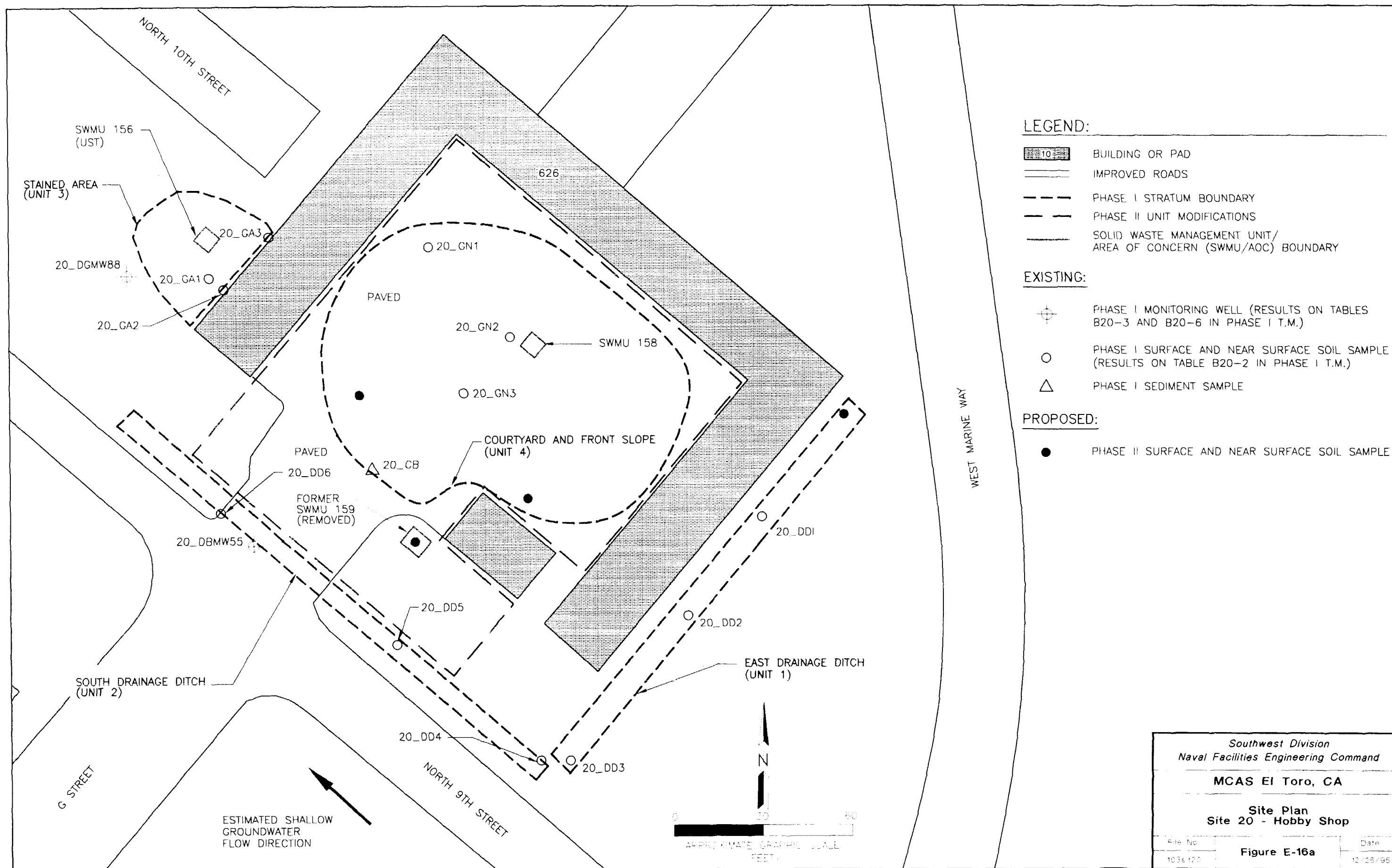
Figure E-15c

Date

12/26/95

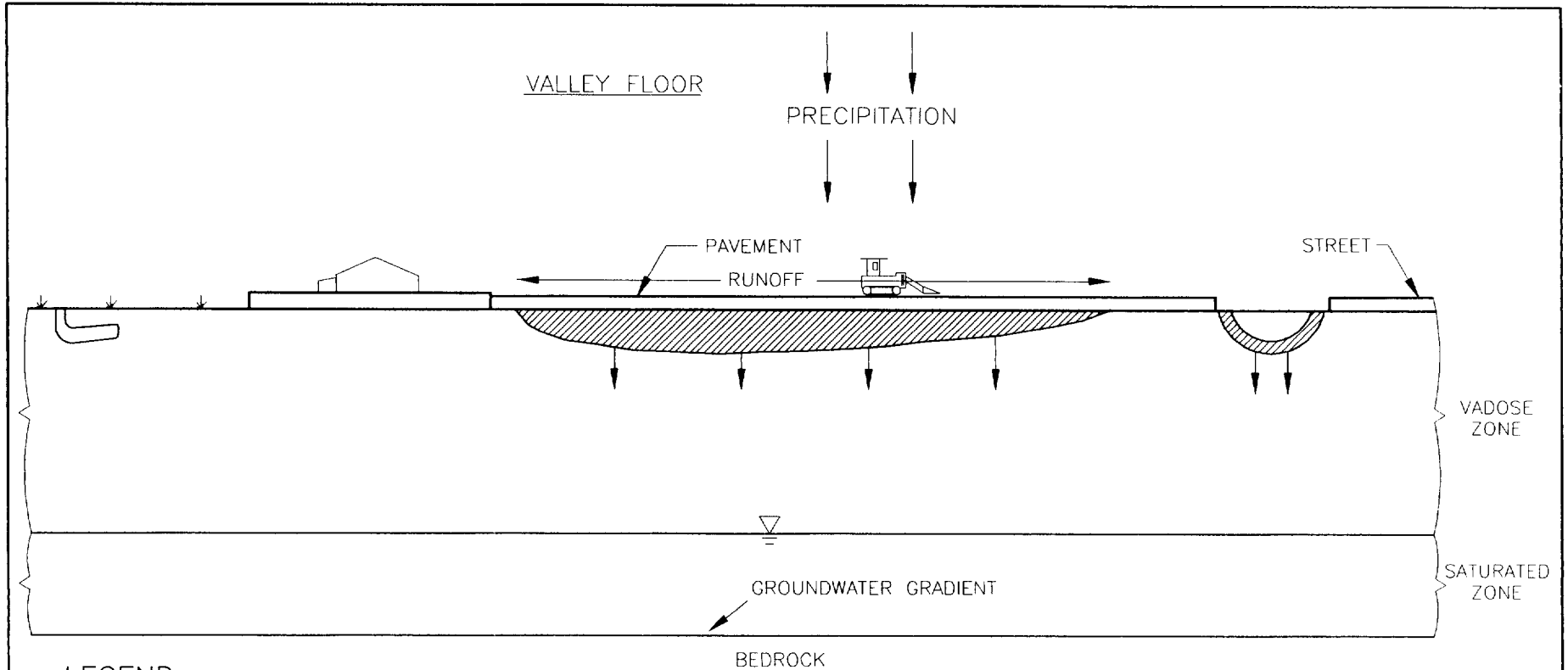


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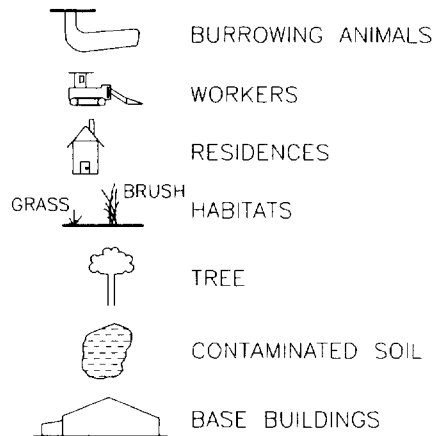
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### LEGEND:

#### RECEPTORS:



#### PATHWAYS:



Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Conceptual Site Model  
Site 20 - Hobby Shop

File No.

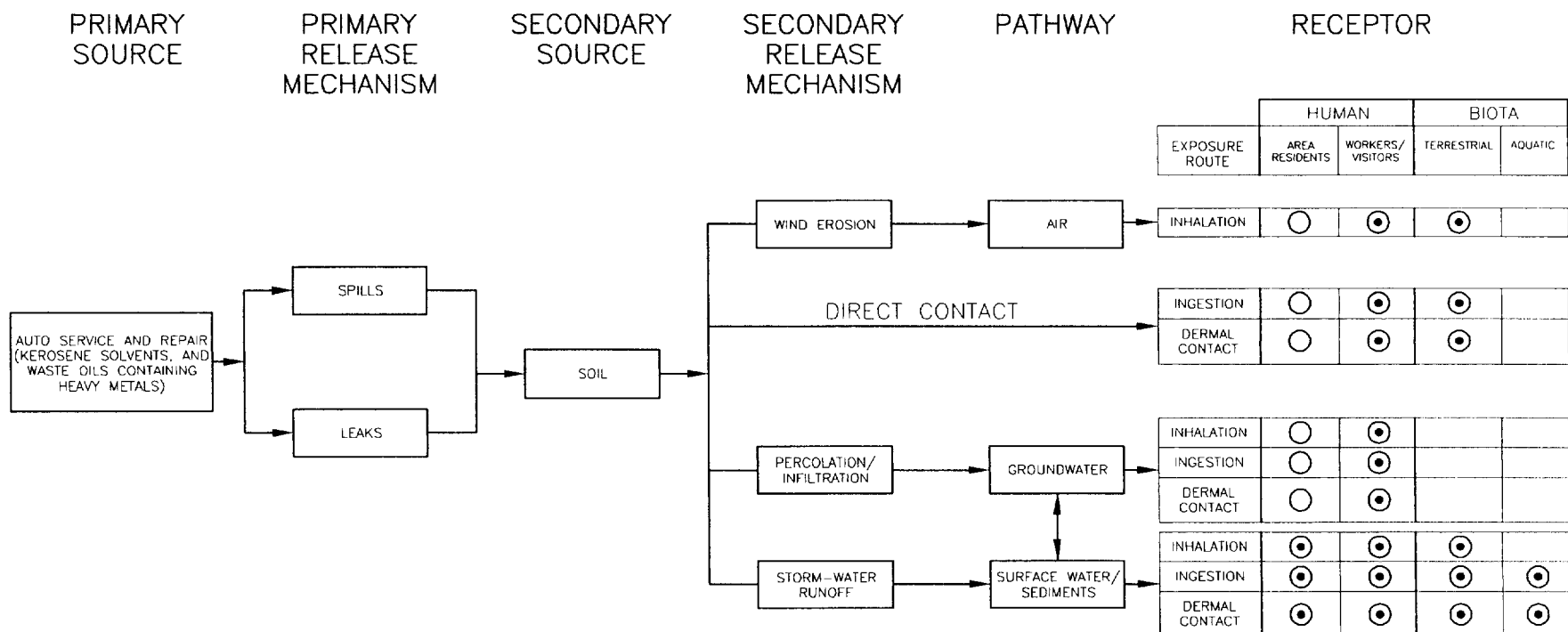
103dl20

Figure E-16b

Date

12/26/95

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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

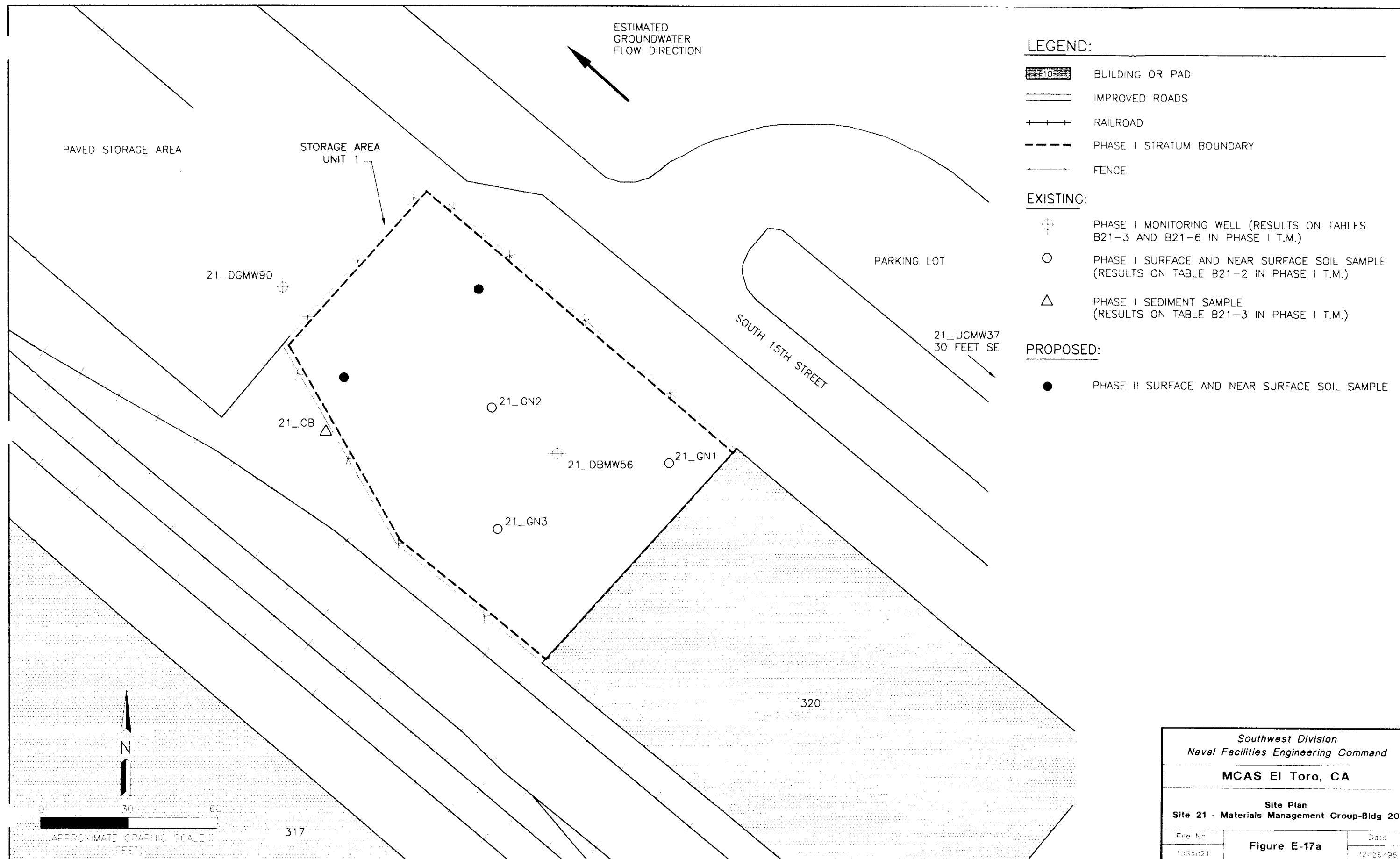
Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 20 - Hobby Shop

File No.	Figure E-16c	Date
103mod20		12/26/95

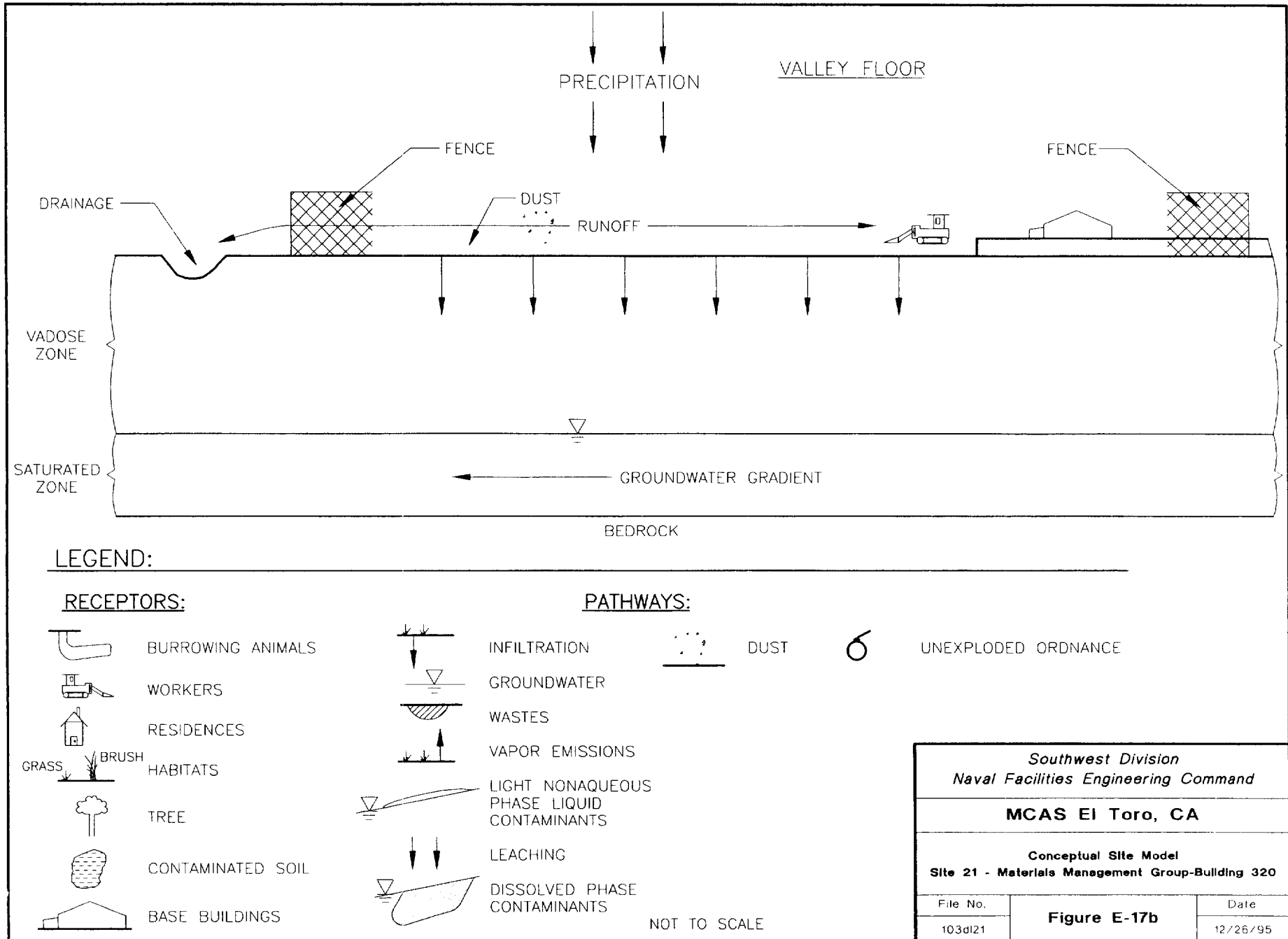
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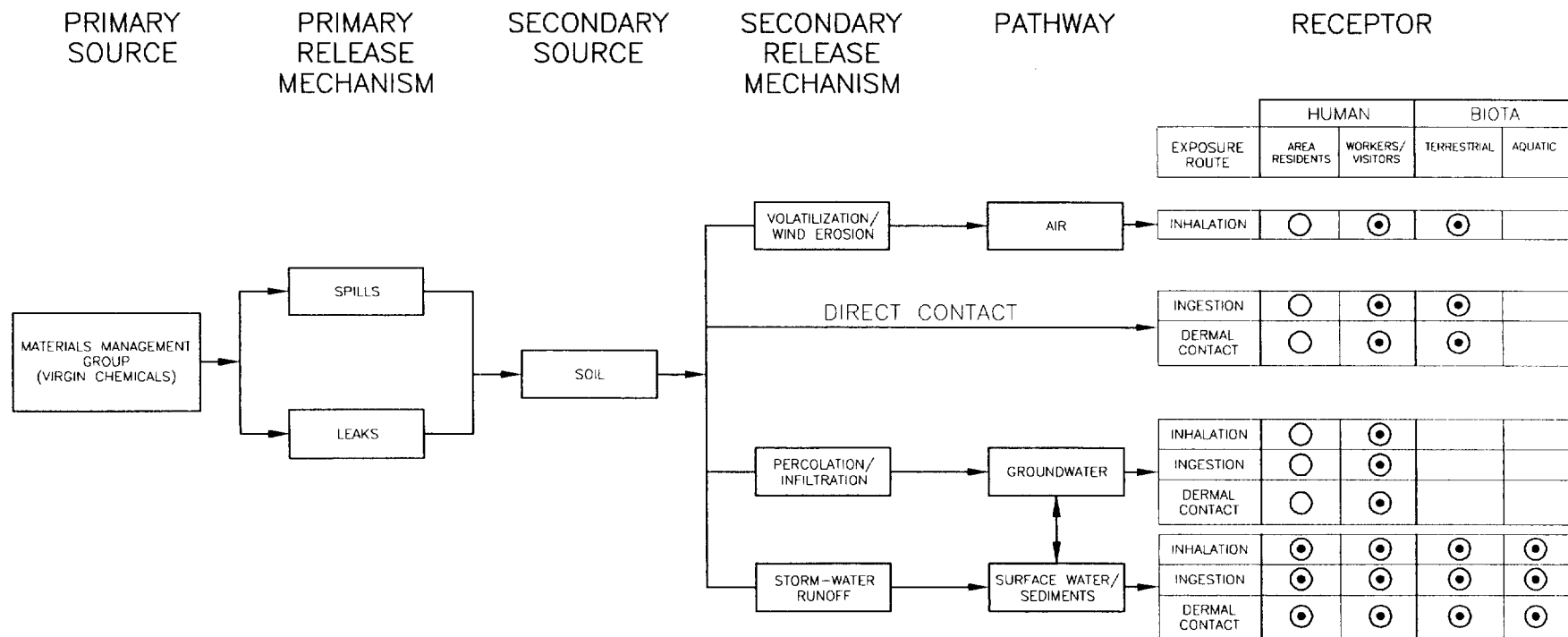


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 21 - Materials Management Group-Building 320

File No.

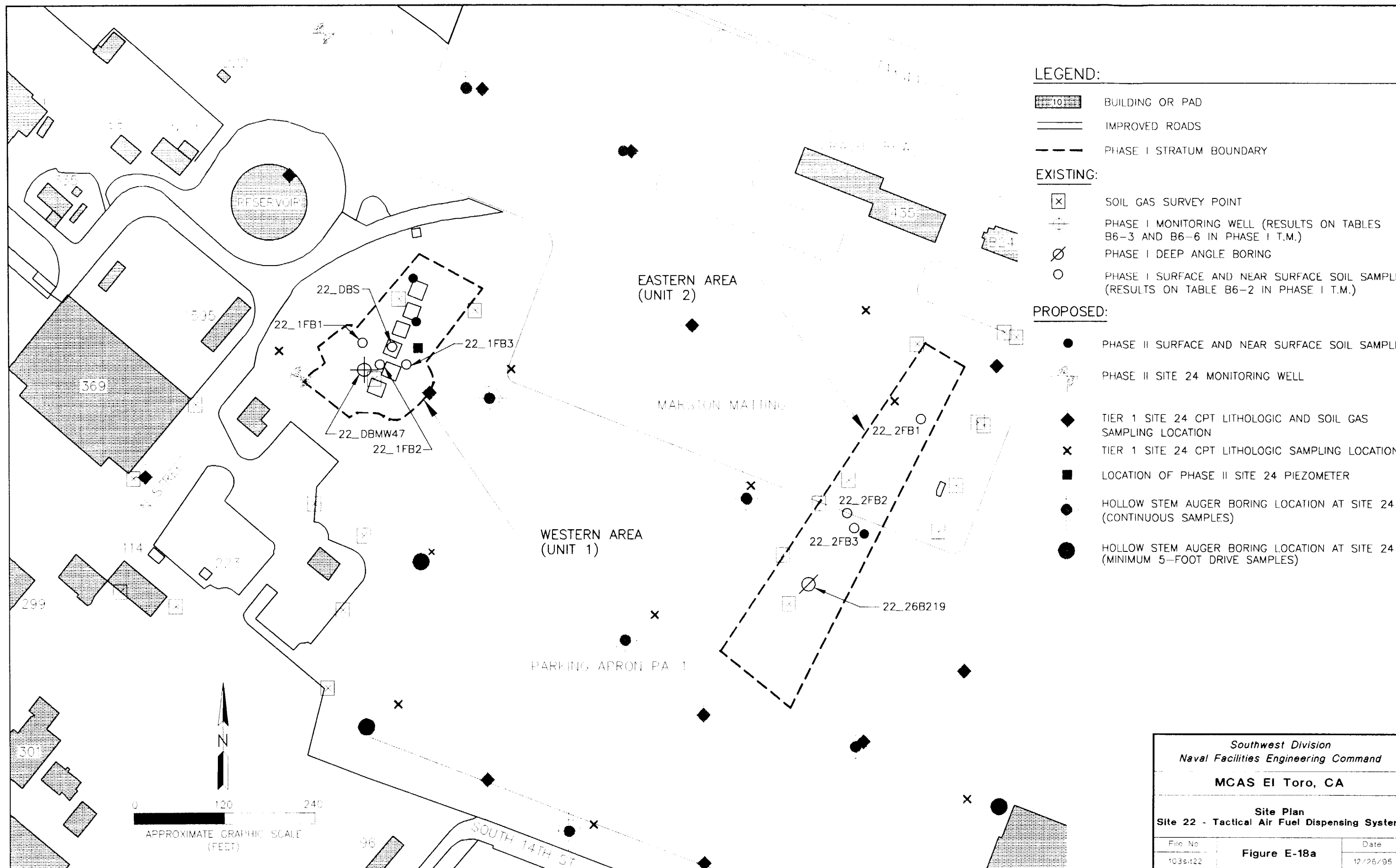
103mod21

Figure E-17c

Date

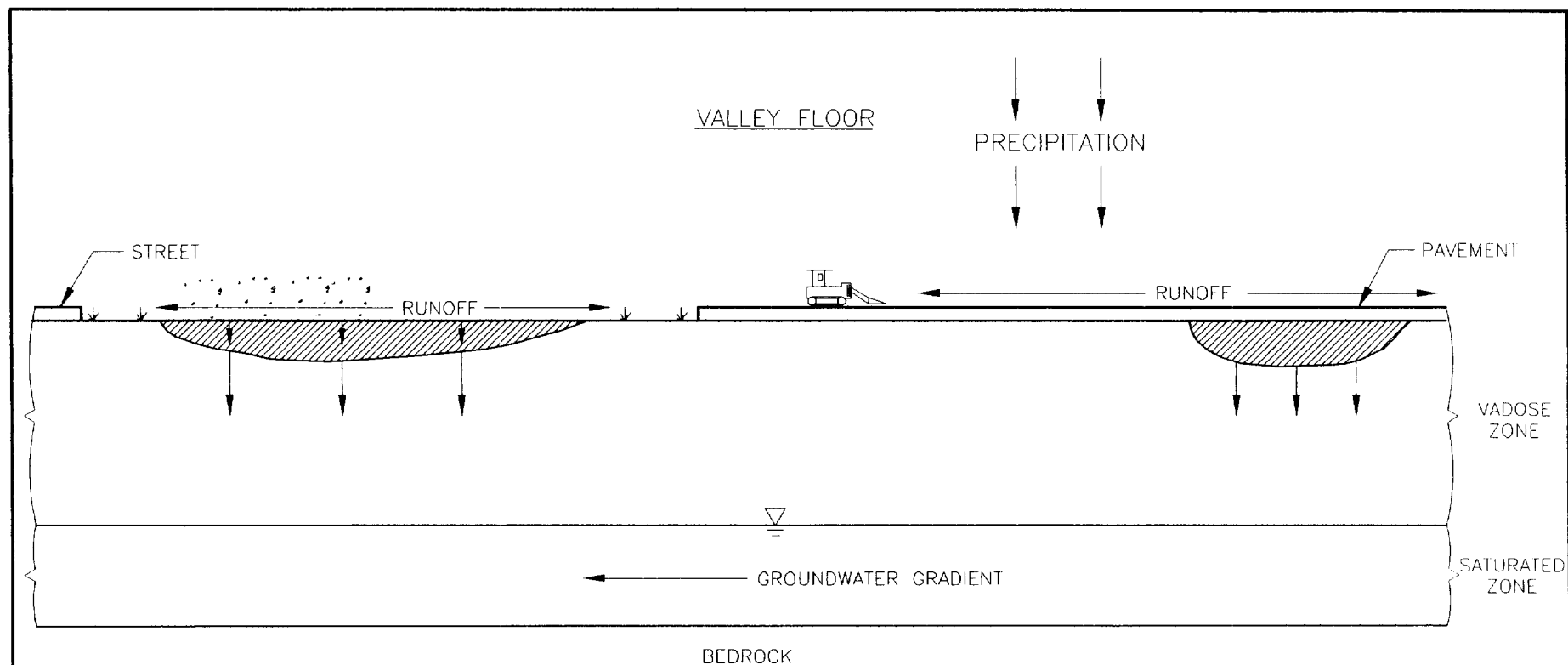
12/26/95

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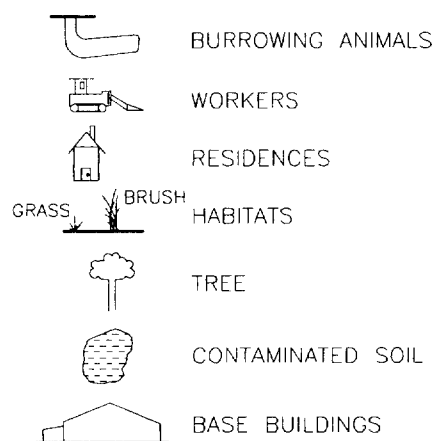
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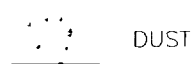
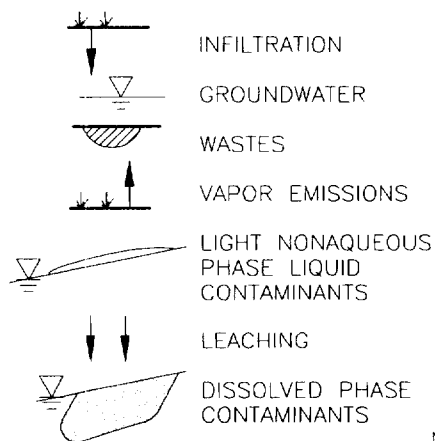


### LEGEND:

#### RECEPTORS:



#### PATHWAYS:



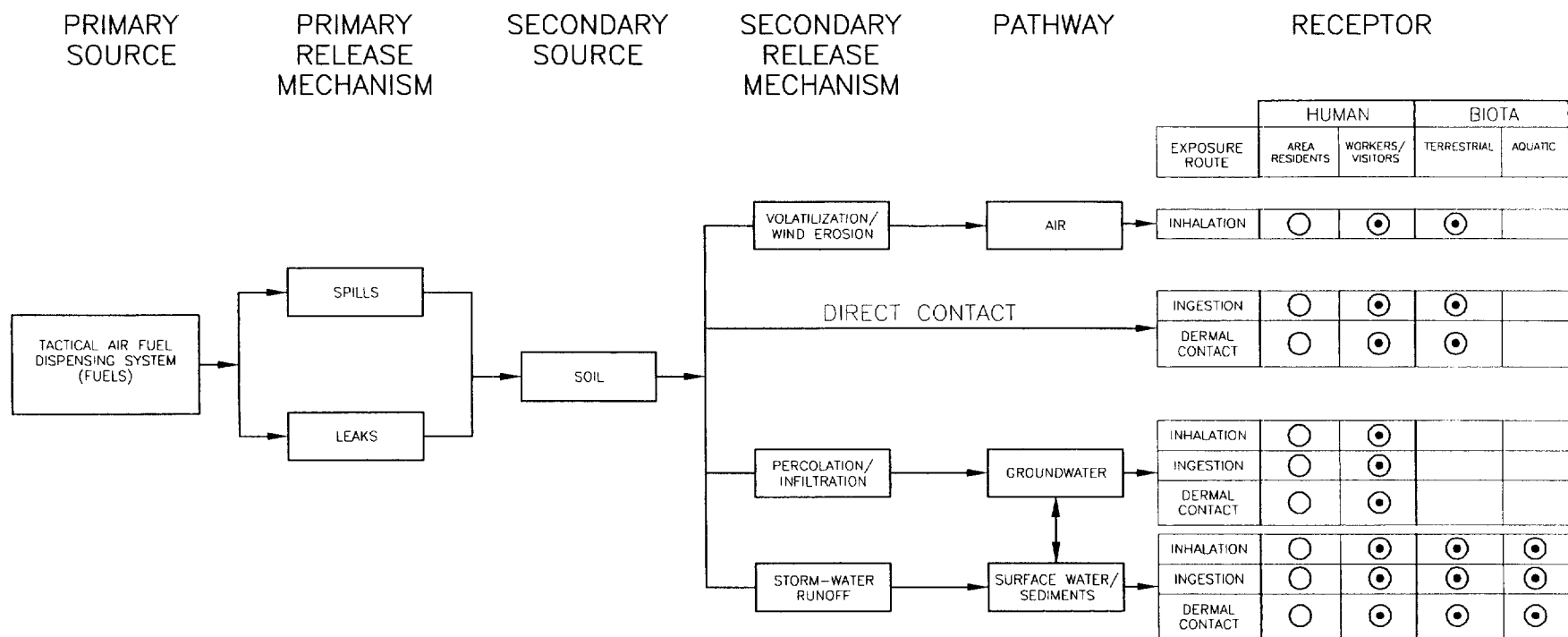
UNEXPLODED ORDNANCE

NOT TO SCALE

Southwest Division Naval Facilities Engineering Command		
<b>MCAS El Toro, CA</b>		
Conceptual Site Model Site 22 - Tactical Air Fuel Dispensing System		
File No.	<b>Figure E-18b</b>	Date
103dl22		12/26/95



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## LEGEND:

- CURRENT POTENTIAL RECEPTOR  
○ FUTURE POTENTIAL RECEPTOR

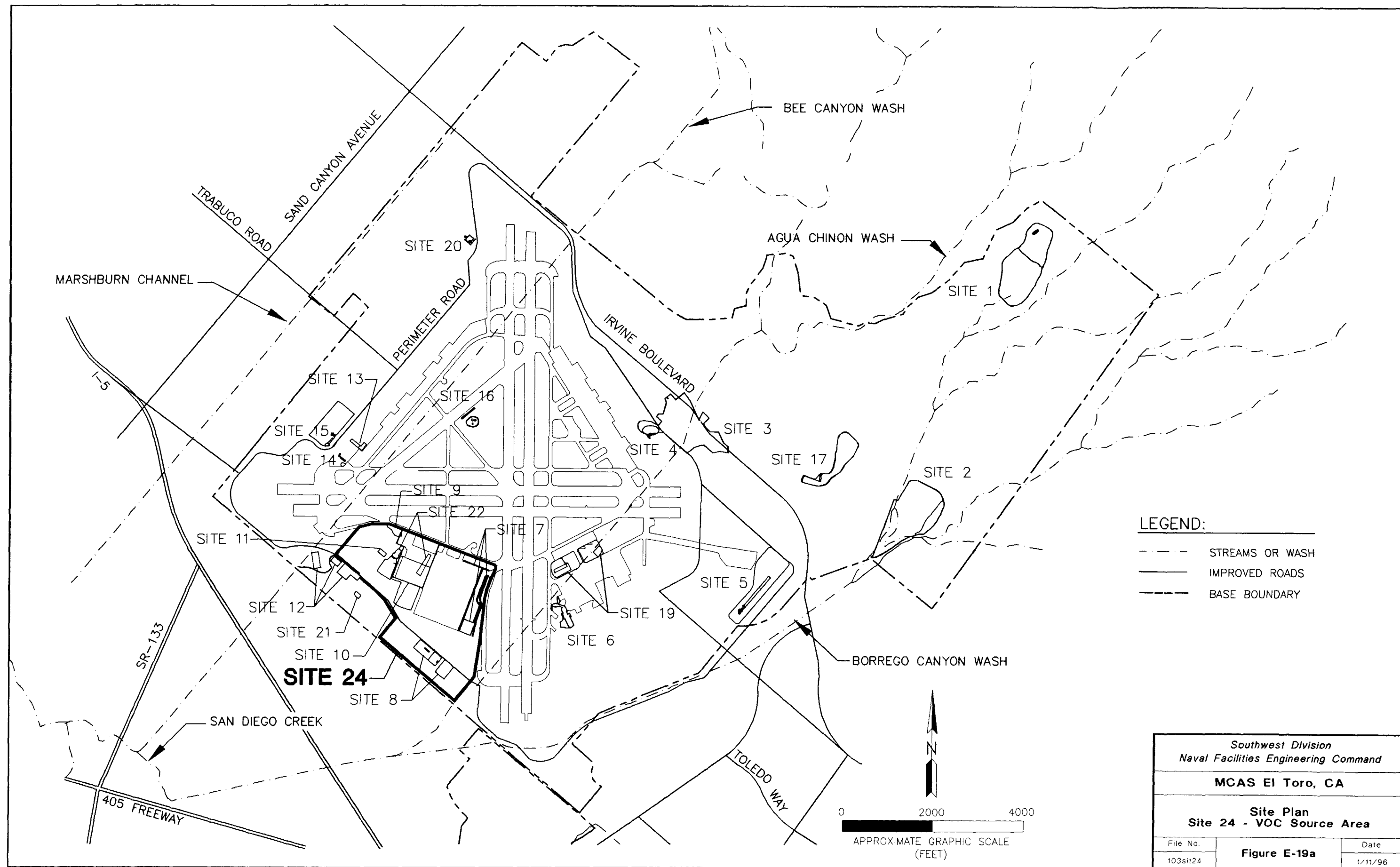
Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 22 - Tactical Air Fuel Dispensing System

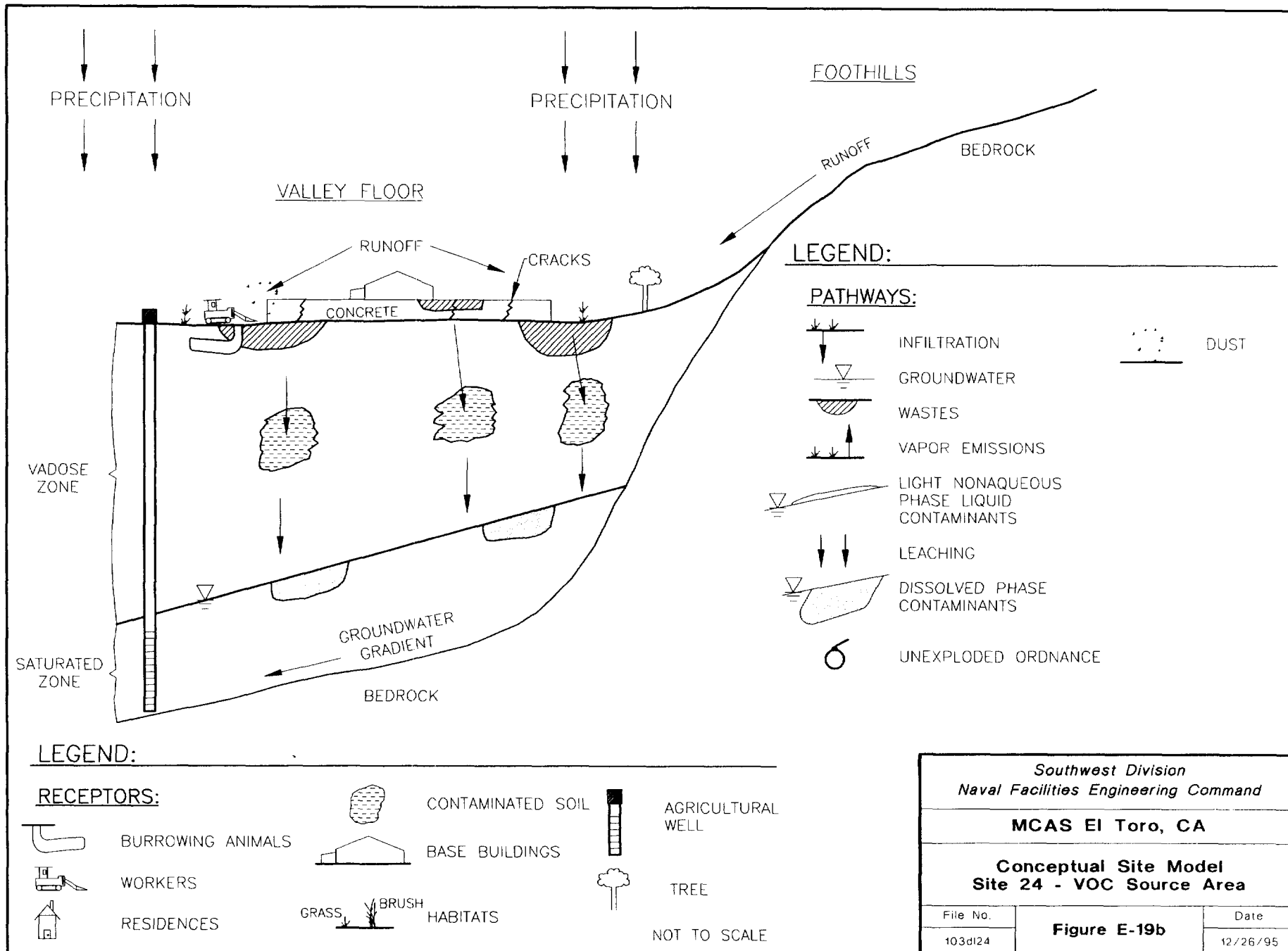
File No.	Figure E-18c	Date
103mod22		12/26/95

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Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Conceptual Site Model  
Site 24 - VOC Source Area

File No.

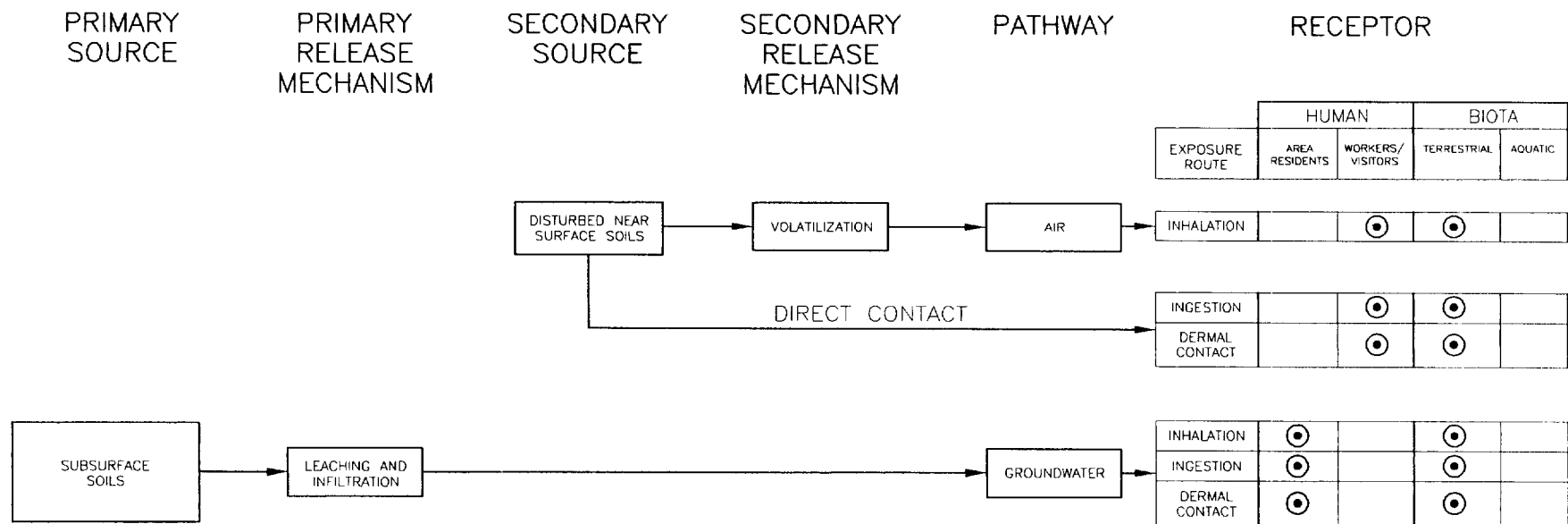
103dl24

Figure E-19b

Date

12/26/95

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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

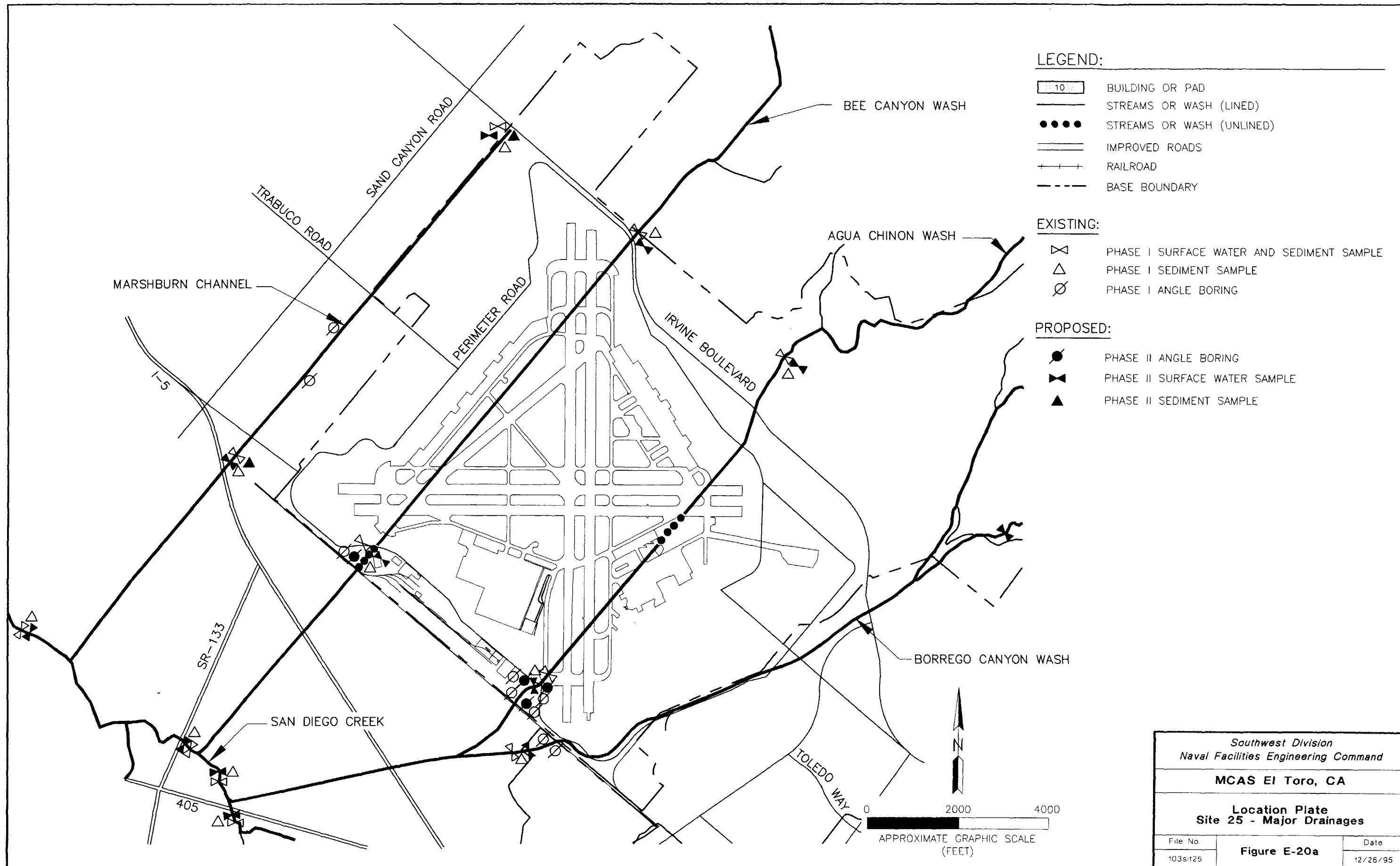
**MCAS El Toro, CA**

**Site Plan**  
**Site 24 - Exposure Routes and Receptors**

File No.	<b>Figure E-19c</b>	Date
103mod24		12/26/95

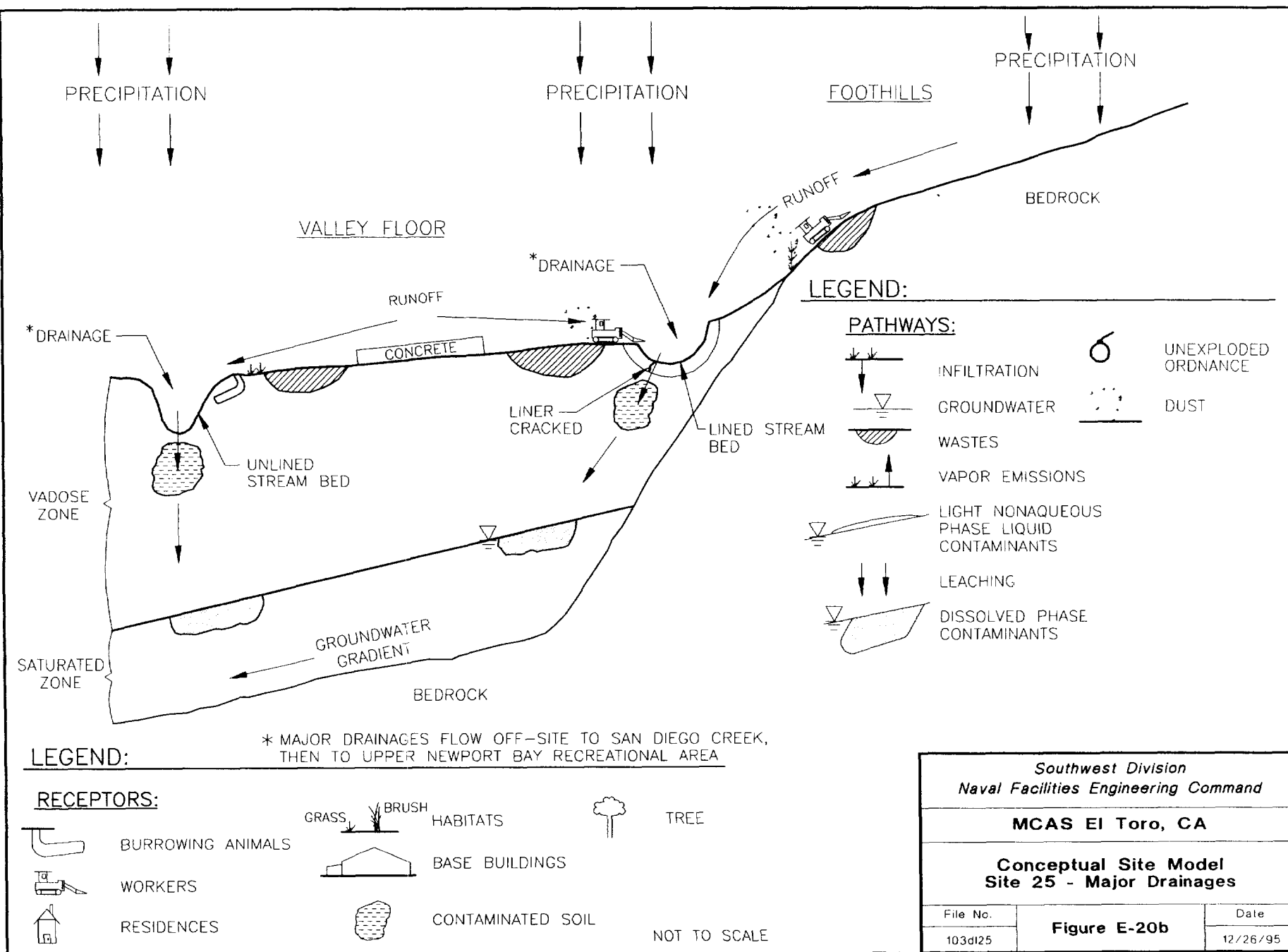


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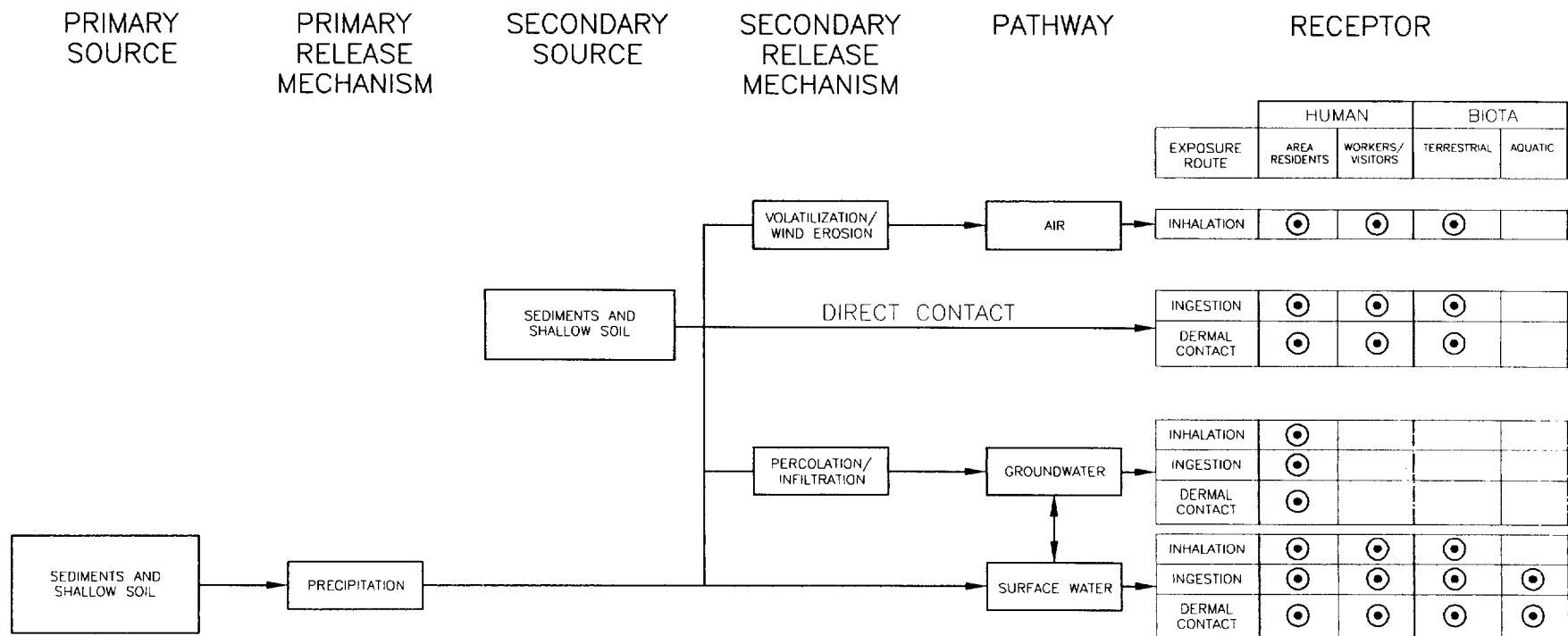


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## LEGEND:

- CURRENT POTENTIAL RECEPTOR
- FUTURE POTENTIAL RECEPTOR

Southwest Division  
Naval Facilities Engineering Command

MCAS El Toro, CA

Exposure Routes and Receptors  
Site 25 - Major Drainages

File No.

103mod25

Figure E-20c

Date

12/26/95

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